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OCEANOGRAPHIC OBSERVATIONS, 1957, EAST COAST OF THE UNITED STATES

SPECIAL SCIENTIFIC REPORT–FISHERIES No. 282

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

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Contribution No. 986 from the Woods Hole Oceanographic Institution

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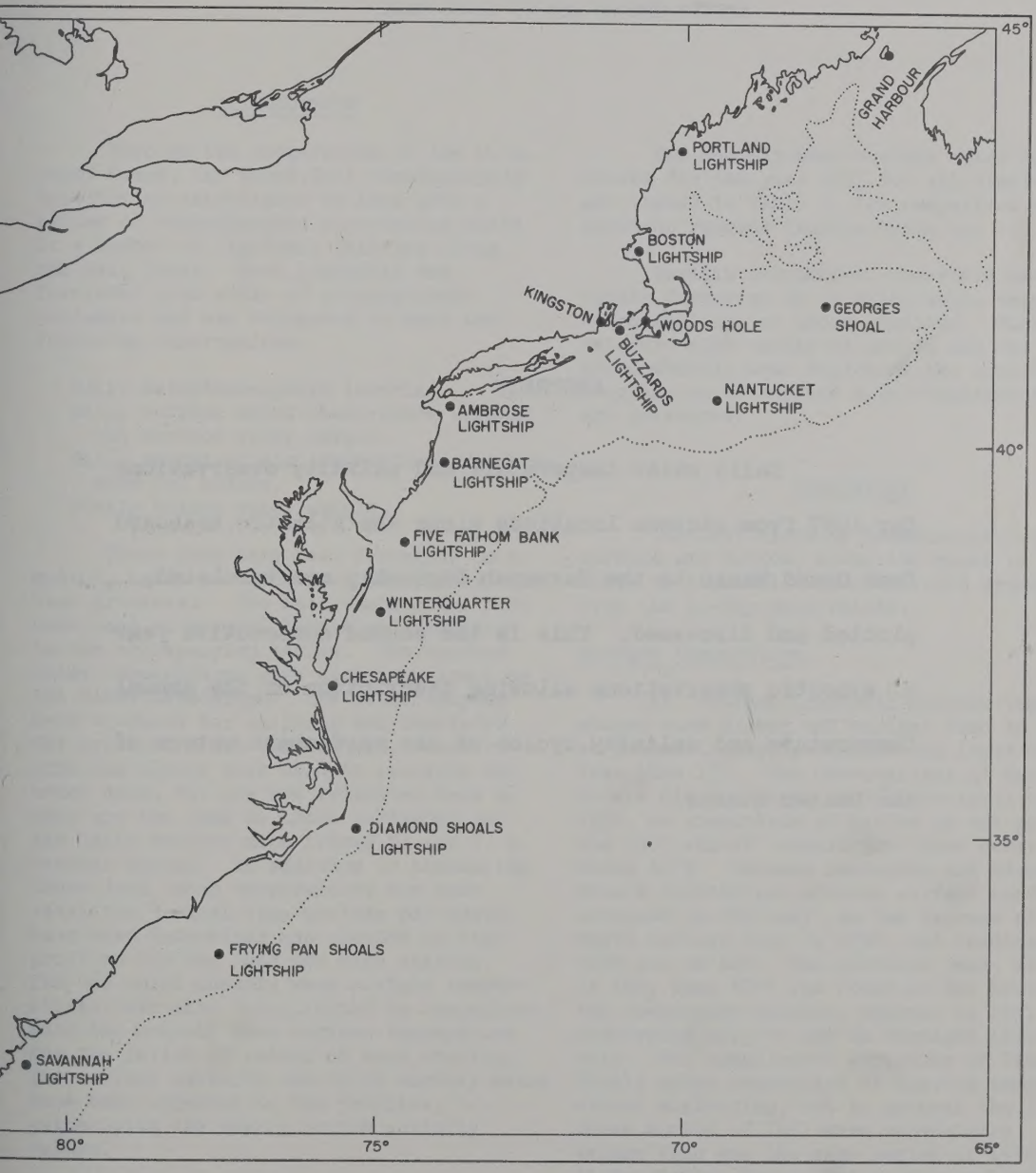

Frontispiece. Locations along the Atlantic Coast reported herein.

ABSTRACT

Daily water temperature and salinity observations for 1957 from sixteen locations along the Atlantic seaboard from Grand Manan to the Savannah Lightship are tabulated, plotted and discussed. This is the second consecutive year of synoptic observations allowing description of the annual temperature and salinity cycles of the east coast waters of the United States.

OCEANOGRAPHIC OBSERVATIONS, 1957

EAST COAST OF THE UNITED STATES

INTRODUCTION

Through the cooperation of the U. S. Coast Guard, the Woods Hole Oceanographic Institution established in late 1955 a series of oceanographic observation posts at a number of lightship stations along the East Coast. Each lightship was furnished with a kit of oceanographic equipment and was requested to make the following observations:

Daily bathythermograph lowering.
Daily surface water temperature reading and surface water sample.
Daily record of air temperature, weather, wind and clouds.
Weekly bottom water sample.

These data have been forwarded on a monthly basis to Woods Hole where they have been processed. The bathythermograms have been read at several levels and tabulated in the accompanying tables. The surface water temperatures were used as a check on the bathythermograph. The water samples were titrated for salinity and tabulated. The records of air temperature, weather, wind and clouds were used in studying the other data, but are not presented here as they are the same as those published in the daily weather maps issued by the U. S. Weather Bureau. In addition to tabulating these data, mean temperatures for each level for 3 equal time periods per month have been determined and plotted as time profiles for the year for each station. The one-third monthly mean surface temperatures have also been plotted in comparison with the monthly mean surface temperature for the period of record of each station. The surface salinity one-third monthly means have been appended to the profiles, together with the weekly bottom salinity values.

Where data were incomplete, means were calculated only in those cases where temperature conditions appeared to be static; where conditions were changing, means were not derived from incomplete records.

The monthly mean surface water temperatures for the year 1957 for all stations are listed in table 1, for comparison with previous records (Bumpus 1957a and b.)

Certain independent observers have kindly forwarded to us daily water temperature readings at shore stations. These data are also tabulated herein and the one-third monthly mean depicting the annual progression of surface water temperatures are presented.

COMMENTARY

The 1957 cycle of temperature, both surface and bottom, along the coast is shown in figure 1. Contours were drawn from the 10-day mean values.

Surface temperature.

At Portland Lightship minimen temperatures were higher and earlier than in 1956; at Boston Lightship earlier and lower by less than 1°F. The observations at Georges Shoals did not begin until late April of 1956, so comparison of minima is not possible. The 1957 winter temperature there never fell below 40°F. Between Nantucket and Diamond Shoals Lightships, minimum surface readings occurred in February, on the average of a month earlier than in 1956, and readings were not as low. The previous year, water of less than 40°F was found as far south as the Chesapeake station, whereas in 1957 it penetrated only so far as Barnegat Lightship. The complicated structure at Diamond Shoals makes comparison of minimum temperatures misleading, but in general the first three months of 1957 were appreciably warmer than was the same period of 1956. At Frying Pan Shoals and at Savannah the 1957 minima were higher by 5.2°F and 2.9°F respectively. Thus, the 1957 winter was of shorter duration than the 1956 winter, and vernal warming began earlier. At most stations warming continued in advance of both the mean and the 1956 record throughout the spring.

Table 1.

Surface Water Temperatures - Monthly and Annual Means for 1957

	Grand Manan	Portland Lightship	Boston Lightship	Georges Shoal	Nantucket Lightship	Woods Hole	Buzzards Lightship	Kingston	Ambrose Lightship	Barnegat Lightship	Five Fathom Bank Lightship	Winter Quarter Lightship	Chesapeake Lightship	Diamond Shoals Lightship	Frying Pan Shoals Lightship	Savannah Lightship
Jan	31.8	-	39.5	41.9	-	33.3	38.4	34.9	-	39.7	49.5	44.8	43.9	63.6	64.1	55.0
Feb	34.9	38.5	36.2	40.8	39.9	34.3	36.5	35.4	38.6	40.7	40.7	42.4	42.3	64.5	64.9	57.6
Mar	36.5	37.8	38.1	41.1	41.4	38.2	38.1	39.6	39.4	41.3	41.8	41.5	45.7	60.4	66.8	58.5
Apr	40.6	39.9	41.5	42.6	-	44.8	44.4	45.5	44.3	46.8	47.1	47.9	52.9	69.7	68.6	65.0
May	47.5	47.3	49.3	47.6	-	55.2	51.3	53.2	-	54.2	56.3	57.7	62.8	75.2	73.7	73.5
Jun	51.7	54.3	59.5	52.7	-	65.7	60.2	63.5	-	66.7	66.4	66.1	71.2	78.2	77.4	81.4
Jul	56.0	59.9	63.7	59.4	-	71.9	65.6	68.9	66.3	68.1	71.7	72.4	75.2	81.2	79.5	83.4
Aug	58.4	62.2	64.2	62.8	-	71.3	66.5	68.8	70.0	71.0	72.1	72.1	75.0	81.1	79.7	82.6
Sep	54.8	57.2	59.6	63.7	-	68.9	66.6	66.5	69.2	70.4	-	71.2	74.8	81.6	78.6	82.3
Oct	51.2	51.1	53.7	60.9	58.7	59.7	59.7	56.9	61.5	-	63.8	65.2	65.2	73.2	76.1	73.7
Nov	45.5	46.9	50.1	55.3	-	52.2	53.6	49.6	52.9	52.0	57.2	57.8	58.4	73.9	73.3	63.0
Dec	40.2	41.4	41.1	48.5	-	43.3	46.7	-	-	49.4	48.9	51.8	49.9	71.1	66.0	-
Ann	45.8	-	50.0	51.4	-	53.2	52.3	-	-	-	-	57.6	59.8	72.8	72.4	-

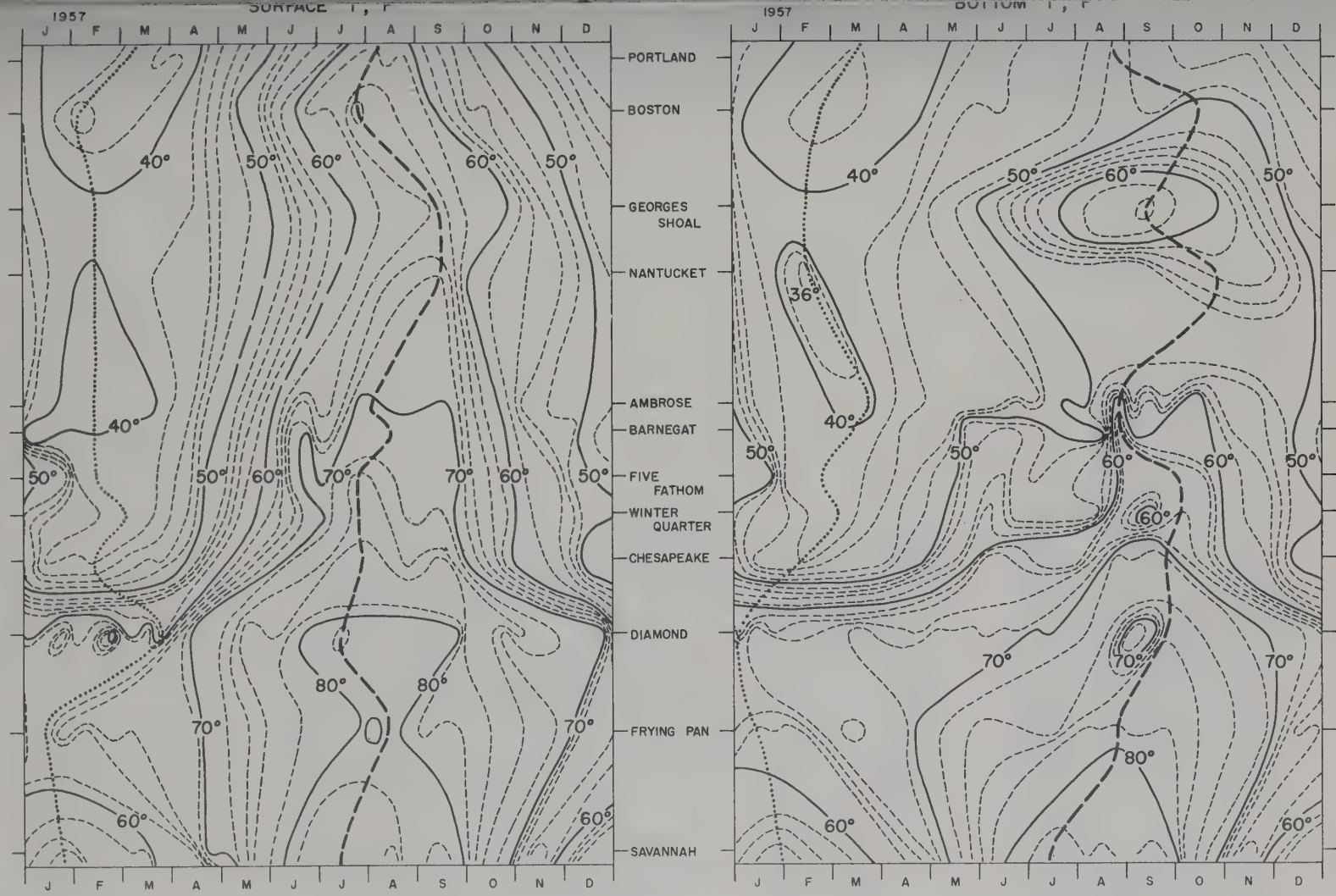

Figure 1. Annual cycle of temperature at the surface (left) and bottom (right) along the string of observation posts for 1957. Heavy dotted and dashed lines indicate minimum and maximum temperature respectively.

Surface maxima north of Cape Cod (Nantucket data missing) were greater by 2°F and 4°F at Portland Lightship and Georges Shoals respectively than in 1956; at Boston Lightship it was lower by 0.7°F. From Ambrose through Savannah Lightships (Diamond Shoals excepted) surface maxima were both earlier and lower than in 1956. Thus, north of Cape Cod summer surface temperatures followed a smooth curve, roughly parallel to the mean, whereas south of the Cape temperatures leveled off abruptly after the first 10 days of July.

Bottom temperature.

At the bottom along the continental shelf both minimum and maximum temperatures occur during isothermal conditions of late winter and early fall. Thus, the 1957 bottom minima, like the surface minima, were above those for 1956. This was true of all stations with the exception of Nantucket, where an intrusion of cold water at depth occurred in what had been a completely mixed column two weeks earlier.

Maximum temperatures at the bottom occurred at the same time or earlier than in 1956. As should be expected they occur at the time of the autumn overturn which mixes bottom water with the warmer water of the upper layers. Thus, bottom maximum temperatures are dependent upon the time of occurrence of autumn storms. Early autumn storms which abruptly destroy the thermocline produce high bottom maxima as in 1957; if the overturn is delayed until cooling is advanced at the surface, bottom maxima will be relatively lower as in 1956. This explains how the bottom maxima could be generally higher in 1957 than in 1956 (as they were from Boston to Winter Quarter, inclusive), even though the surface maxima were generally lower. It also points out the dangers inherent in trying to postulate bottom conditions from a knowledge of surface temperature regimes.

Grand Harbour, Grand Manan (Figure 2, Table 2)

The departure of the Grand Harbour readings from the mean for Southwest Head (Hachey, 1939) was mentioned by Bumpus (1957, b). The most noteworthy feature of the 1957 surface temperatures given here is that they support the records from other stations in indicating a warm year. The winter minimum occurred in mid-January, more than a month earlier than the previous year, and was followed by gradual warming throughout February. The annual mean for 1957 (Table I) is 1.5 degrees higher than that for the previous year. The 10 day mean temperatures for 1957 are above those for 1956 from the end of April through mid-November.

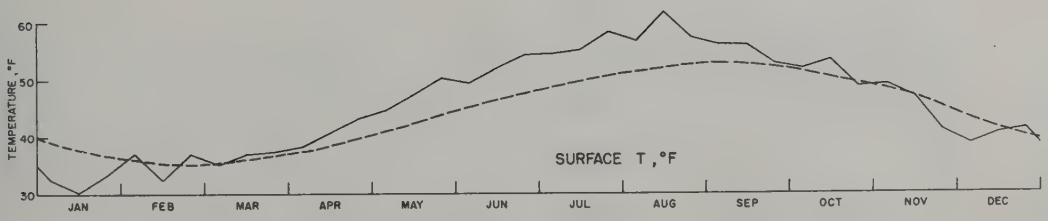

Figure 2. Grand Harbour, Grand Manan, 1957 (thin line); Southwest Head, Grand Manan, 1929-1936 (dashed line).

Table 2

GRAND HARBOUR, GRAND MANAN, N. B., CANADA* 44°40.8'N. 66°44.6'W.

Surface Temperature °F - 1957

Month / Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30.5	-	34.0	36.8	43.2	58.5	53.0	54.4	54.8	53.5	51.0	36.0
2	-	-	33.5	40.0	45.5	52.5	52.0	54.0	55.4	47.0	50.5	35.4
3	-	-	33.8	37.0	45.0	47.8	52.2	55.0	57.3	49.0	50.8	35.0
4	-	38.0	33.2	35.5	41.0	46.2	53.0	51.8	56.4	51.0	50.0	33.5
5	-	36.0	32.6	38.5	42.4	48.8	54.8	56.5	56.8	51.0	48.1	36.0
6	-	36.0	34.5	38.5	43.5	48.5	60.0	55.6	56.0	52.0	48.6	38.0
7	-	37.8	34.5	38.0	44.8	49.0	-	55.0	55.0	52.7	-	43.5
8	33.0	-	38.0	37.5	-	44.5	54.5	62.0	56.5	53.0	46.0	43.0
9	32.0	-	38.5	37.5	48.0	46.0	55.0	62.3	57.4	54.3	50.0	42.5
10	34.0	-	38.5	42.0	47.3	50.5	54.6	58.9	54.8	54.5	46.5	44.0
11	29.8	-	34.4	37.0	59.0	52.5	50.2	-	55.0	53.9	43.1	45.4
12	30.0	30.0	34.1	36.9	49.0	53.0	52.0	59.8	55.4	51.0	44.0	45.0
13	30.0	30.2	39.0	41.0	45.0	50.5	59.0	59.8	56.0	54.0	45.4	37.0
14	29.8	30.2	37.0	38.5	46.0	51.5	57.5	59.2	57.0	53.5	47.0	40.0
15	30.0	32.2	38.1	40.0	47.5	51.0	54.0	60.0	55,0	54.5	47.9	42.0
16	30.0	34.5	35.8	42.0	47.9	53.5	54.5	61.9	57.0	56.3	47.4	40.5
17	30.0	32.0	37.2	42.8	43.0	51.0	54.0	64.0	57.5	54.0	48.0	40.2
18	31.2	33.0	37.0	44.5	45.0	50.0	54.0	64.0	55.0	52.0	47.2	36.0
19	31.0	34.4	40.0	40.0	45.0	52.0	57.0	64.0	54.8	52.2	48.0	37.0
20	30.0	34.0	36.8	44.5	45.0	53.8	58.0	63.2	56.0	53.0	50.2	41.9
21	-	38.0	35.0	41.0	43.5	53.2	56.8	64.0	57.0	49.5	46.0	45.0
22	39.0	40.2	42.0	43.0	45.5	53.0	58.0	54.0	55.5	50.0	45.0	41.0
23	40.0	34.8	35.3	42.5	47.0	59.0	54.2	55.1	56.0	49.4	43.5	43.0
24	35.0	35.2	37.0	43.8	54.1	-	53.8	60.5	52.5	50.0	44.0	44.5
25	30.4	38.8	41.0	43.0	53.8	54.5	58.0	60.0	51.0	52.8	41.0	39.0
26	35.6	36.5	36.0	42.0	50.8	52.5	60.8	55.2	54.0	46.4	35.5	39.2
27	32.5	38.0	37.1	42.8	49.0	51.5	60.0	57.8	49.5	43.0	32.0	42.5
28	30.0	34.0	34.9	43.0	47.5	52.0	59.9	-	51.0	44.2	40.0	40.0
29	30.0	-	36.2	43.5	55.0	57.0	63.0	-	48.8	45.0	40.0	40.4
30	29.8	-	36.6	45.5	52.0	54.5	57.0	54.0	51.0	52.0	42.5	41.4
31	31.0	-	39.0	-	53.0	-	59.0	54.2	-	52.8	-	39.5
Mean	31.8	34.9	36.5	40.6	47.5	51.7	56.0	58.4	54.8	51.2	45.5	40.2

*Observations taken in shallow water about one mile up the west side of the harbor from Grand Harbour Light. One reading per day, courtesy Mr. Edward Green.

Portland Lightship (Figure 3, Table 3)

Surface temperatures from May through August, 1957, were well above the 1956 readings and above the mean for 1947-1956, except for a drop during the first 10 days of July. After September, however, they fell below both the mean and the 1956 values.

Minimum temperatures of less than 38° occurred in March, and were some two degrees warmer than the 1956 minimum. The thermocline began to develop in mid-April and reached a maximum in early August with surface temperatures above 60°F, more than 2 degrees warmer than the 1956 maximum; bottom maximum was greater than 48° F in late August. By mid-November the thermocline had been destroyed, the water becoming isothermal at 46°. Chilling continued more rapidly during December than it had the year before.

Surface salinities were uniformly higher throughout the year than the comparable 1956 values and showed less fluctuation. The minimum in terms of 10 day means was 31.46 °/oo and occurred in late May; the 1956 minimum was less than 29 °/oo in early May. Highest surface salinities, just under 33 °/oo, appeared in February and again in December.

Bottom salinities ranged from slightly above 33 °/oo in February and again in the late fall to less than 31.4 °/oo in July. There was less difference between surface and bottom salinities in 1957 than there had been the previous year.

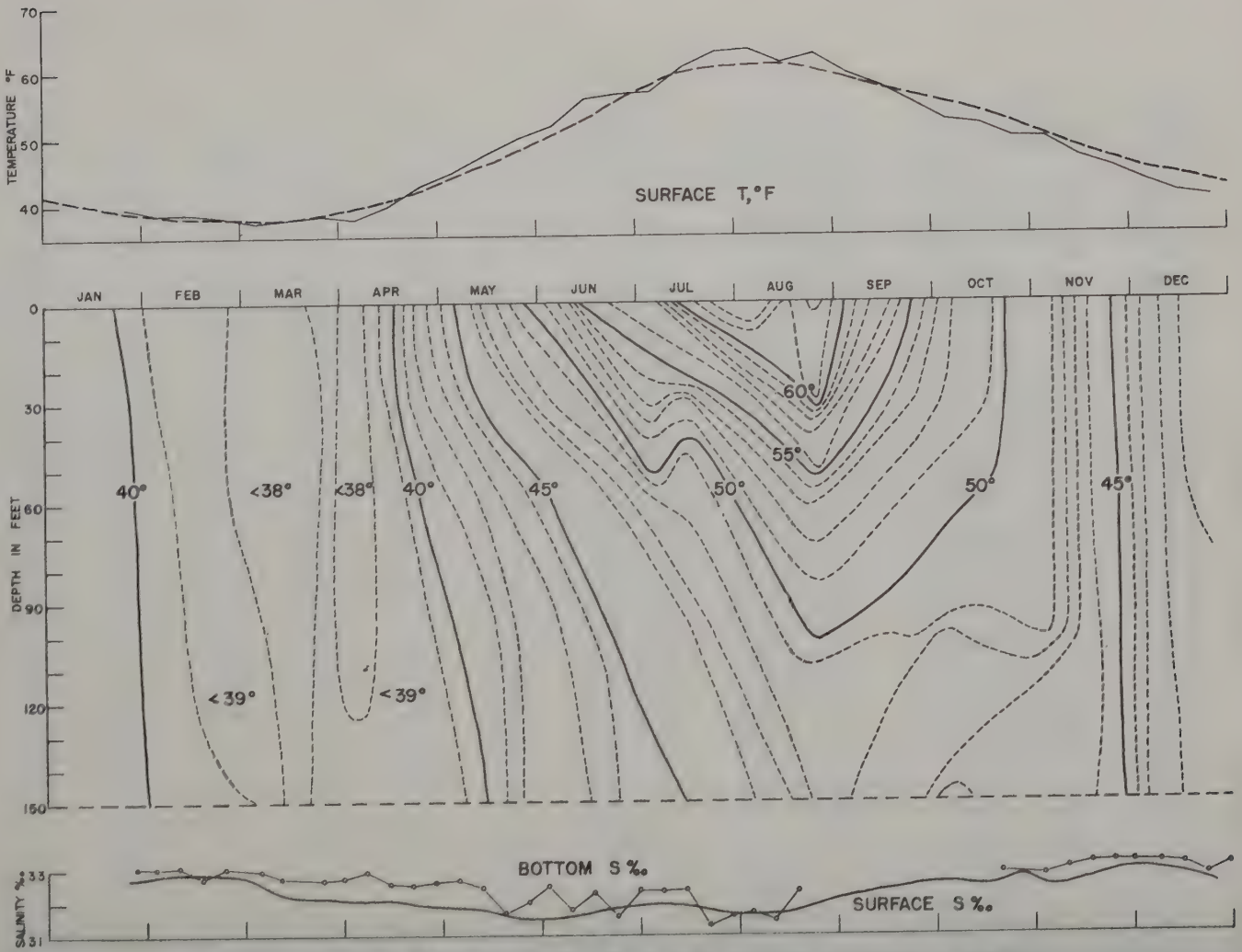

Figure 3. Portland Lightship, 1957. (Dashed line in upper diagram, mean for period 1947-1956)

Table 3

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

January 1957

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	43.1	43.1	43.1	43.1	44.0	32.94	-
6	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-
21	41.8	41.9	41.9	42.0	42.0	33.16	-
22	-	-	-	-	-	-	-
23	-	-	-	-	-	30.10	-
24	39.7	40.0	40.0	40.1	40.1	33.02	-
25	38.3	39.1	39.6	39.9	39.9	32.66	-
26	39.8	40.4	40.4	40.6	40.7	33.00	-
27	40.4	40.5	40.6	40.7	40.7	33.00	33.04
28	38.7	38.9	39.1	39.4	39.9	32.85	-
29	38.3	39.0	39.0	39.1	39.1	32.98	-
30	39.6	40.0	40.0	40.1	40.2	33.12	-
31	40.1	40.9	40.9	41.1	41.2	33.13	-
Mean	-	-	-	-	-	-	-

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

February 1957

Depth / Day	Temperature °F 0'	30'	50'	100'	150'	Salinity °/oo 0'	150'
1	37.2	37.9	38.1	38.2	38.5	32.01	-
2	36.3	36.8	36.8	37.2	37.3	32.93	-
3	37.9	38.3	38.3	38.4	38.3	33.04	33.02
4	-	-	-	-	-	32.92	-
5	41.0	41.1	41.2	41.8	41.9	32.92	-
6	40.2	40.6	40.9	41.1	41.1	32.93	-
7	-	-	-	-	-	32.99	-
8	40.1	40.2	41.1	-	-	32.84	-
9	37.4	37.4	37.4	37.8	-	33.02	-
10	38.9	38.7	39.1	40.6	41.1	32.95	33.07
11	39.4	39.4	39.5	39.9	40.2	33.19	-
12	39.7	39.7	39.7	39.9	39.9	33.03	-
13	39.1	39.3	39.5	39.6	39.6	33.00	-
14	38.7	38.8	38.8	38.7	38.8	32.87	-
15	-	-	-	-	-	32.78	-
16	38.0	37.9	37.9	37.8	37.8	32.84	-
17	37.3	37.3	37.3	37.9	-	32.71	32.71
18	38.1	38.0	37.9	38.4	39.3	32.73	-
19	39.1	38.9	38.9	39.2	39.7	32.80	-
20	39.1	39.2	39.4	-	40.0	32.99	-
21	38.9	38.9	38.9	39.3	40.1	32.87	-
22	38.8	38.7	38.8	38.8	39.4	32.87	-
23	35.2	35.1	35.1	35.8	35.9	32.88	-
24	38.2	38.5	38.6	39.1	40.0	32.87	33.02
25	38.7	38.6	38.6	38.7	39.8	32.84	-
26	37.9	37.8	37.7	38.1	39.7	32.73	-
27	38.1	38.0	37.9	38.3	38.9	32.66	-
28	38.7	38.7	38.8	38.8	38.8	-	-
Mean	38.5	38.6	38.6	38.8	39.4	32.86	32.96

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

March 1957

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	38.6	38.6	38.6	38.7	38.8	-	-
2	37.0	37.0	37.3	37.5	38.4	-	-
3	37.4	37.3	37.4	37.9	38.9	-	-
4	37.1	37.1	38.0	38.6	38.9	-	-
5	37.2	37.3	37.4	38.9	39.4	-	-
6	36.6	37.2	37.2	37.5	39.4	-	-
7	37.3	37.2	37.2	37.8	39.5	-	-
8	37.0	37.0	37.0	37.7	-	-	-
9	-	-	-	-	-	-	-
10	37.7	37.7	37.7	-	-	-	-
11	37.3	37.2	37.2	37.2	37.5	-	-
12	-	37.2	37.2	37.2	37.6	-	-
13	37.1	37.0	37.0	37.2	37.7	-	-
14	37.0	36.6	36.6	36.7	36.8	-	-
15	37.3	37.0	37.1	37.3	37.7	-	-
16	38.1	38.1	38.1	38.1	38.1	-	-
17	-	-	-	-	-	-	-
18	38.0	37.4	37.2	37.3	37.5	-	-
19	38.9	38.1	37.7	37.7	38.3	-	-
20	-	-	37.8	37.8	38.0	-	-
21	37.6	37.6	37.4	37.6	38.4	-	-
22	38.1	37.6	37.7	37.8	38.6	-	-
23	38.2	38.0	38.0	38.0	37.8	-	-
24	-	38.4	-	37.8	38.0	-	-
25	-	-	38.2	37.9	38.6	-	-
26	38.7	37.4	38.2	38.1	38.4	-	-
27	38.5	38.2	38.2	38.0	-	-	-
28	37.9	37.9	37.9	38.2	38.2	-	-
29	38.3	38.3	38.4	38.3	38.3	-	-
30	38.5	38.3	38.3	38.2	38.2	-	-
31	39.1	38.7	38.8	38.7	39.1	-	-
Mean	37.8	37.6	37.7	37.8	38.3	-	-

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

April 1957

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	37.9	38.2	37.9	37.7	-	32.25	-
2	37.3	37.2	37.1	36.8	-	-	-
3	38.1	38.0	37.9	37.8	38.8	32.19	-
4	37.8	37.5	37.5	37.9	38.9	32.37	-
5	37.1	37.0	36.9	37.4	-	32.18	-
6	37.6	37.2	37.1	37.9	38.2	31.82	-
7	37.9	37.9	37.6	37.9	38.7	32.00	32.90
8	37.7	37.2	37.0	37.0	37.9	32.08	-
9	37.6	37.6	37.6	37.5	37.9	31.63	-
10	37.9	37.7	37.3	37.9	38.1	31.84	-
11	38.7	38.2	37.9	38.3	38.8	32.11	-
12	37.9	37.9	37.7	38.2	38.6	32.11	-
13	38.6	38.1	38.1	38.1	38.2	32.10	-
14	38.5	38.5	38.1	38.1	38.2	31.95	32.55
15	38.9	38.2	38.2	38.4	38.5	32.37	-
16	39.4	39.1	38.8	38.8	38.9	32.31	-
17	40.9	40.7	40.2	39.9	39.9	31.96	-
18	39.9	39.2	38.8	38.8	38.8	31.93	-
19	42.1	39.4	39.1	38.7	38.7	31.82	-
20	40.8	40.3	38.7	38.7	38.8	31.79	-
21	40.8	39.9	39.5	38.7	38.8	32.12	32.49
22	41.4	40.2	38.9	38.5	-	32.04	-
23	42.0	41.3	39.3	38.8	38.7	32.28	-
24	44.8	41.8	41.2	39.3	39.0	32.30	-
25	42.1	41.8	40.3	38.6	38.7	32.23	-
26	41.9	41.1	39.9	38.4	38.2	32.10	-
27	42.1	41.5	40.9	38.2	37.9	32.30	-
28	44.9	41.9	41.5	39.4	39.0	31.64	32.58
29	-	42.3	40.9	39.2	39.0	30.49	-
30	44.4	44.1	39.2	39.1	39.0	31.31	-
Mean	39.9	39.4	38.7	38.3	38.6	31.99	32.63

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

May 1957

Day	Temperature °F					Salinity °/oo	
Depth	0'	30'	50'	100'	150'	0'	150'
1	44.0	42.7	40.0	38.8	38.8	31.07	-
2	42.9	42.4	40.2	39.0	39.0	.88	-
3	42.7	42.4	41.7	39.1	38.9	.73	-
4	44.2	42.0	42.0	40.0	39.0	.93	-
5	43.5	42.8	42.0	40.1	-	.75	32.64
6	45.0	43.5	43.2	40.9	-	.93	-
7	45.5	44.0	42.0	40.8	-	.92	-
8	46.6	43.8	41.5	40.3	-	31.94	-
9	45.7	44.7	41.9	40.2	-	32.09	-
10	47.0	44.8	41.6	40.8	-	32.05	-
11	47.2	46.0	41.1	40.2	40.1	31.71	-
12	48.0	43.2	40.7	40.4	-	.72	32.40
13	48.0	45.7	43.6	40.8	-	.30	-
14	48.0	47.4	45.8	40.8	40.2	.67	-
15	48.0	45.0	42.3	40.8	40.2	31.30	-
16	47.4	47.0	45.3	40.8	40.1	32.01	-
17	47.6	44.7	41.9	40.9	40.9	31.33	-
18	47.0	45.0	43.8	41.0	41.0	31.48	-
19	-	-	-	-	-	32.04	31.64
20	45.0	45.0	44.8	41.2	40.8	32.46	-
21	45.0	44.0	44.0	42.9	42.0	31.98	-
22	47.4	44.1	43.9	43.0	-	32.00	-
23	49.0	43.7	43.7	43.0	-	31.32	-
24	50.0	48.6	44.0	42.8	41.5	.36	-
25	50.4	47.0	44.2	43.2	-	.45	-
26	50.0	-	45.7	-	-	.77	31.99
27	49.9	46.8	43.9	42.2	-	.72	-
28	50.9	46.5	43.8	41.2	-	.12	-
29	51.4	45.7	43.8	42.9	42.5	31.18	-
30	52.0	45.6	44.6	43.0	42.6	30.69	-
31	51.0	47.6	44.9	42.8	42.2	-	-
Mean	47.3	44.9	43.1	41.2	40.6	31.66	32.17

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

June 1957

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	50.0	46.5	44.2	42.0	41.1	31.25	
2	49.0	48.1	46.4	41.8	41.1	.47	32.45
3	51.6	-	-	-	-	.69	-
4	51.9	47.2	45.2	43.6	42.2	.52	-
5	51.5	47.0	45.0	42.9	42.0	.59	-
6	51.6	47.8	44.1	42.9	-	.64	-
7	51.2	49.2	43.8	-	-	.64	-
8	52.5	48.4	46.7	43.0	43.0	.44	-
9	52.2	50.8	48.1	43.0	42.6	.23	31.71
10	53.4	52.6	47.1	43.1	42.4	31.43	-
11	-	-	-	-	-	-	-
12	-	-	-	-	-	31.79	-
13	52.7	47.0	45.0	42.7	-	.72	-
14	53.3	51.9	48.0	-	-	.66	-
15	55.0	47.3	44.9	43.0	42.9	.65	-
16	57.8	48.5	47.2	43.5	-	.47	32.28
17	57.5	50.6	46.8	44.2	43.3	.36	-
18	55.7	48.0	45.5	44.1	-	.79	-
19	55.8	47.6	45.3	44.4	-	.95	-
20	57.2	50.0	45.6	44.5	42.8	.64	-
21	55.5	46.8	45.7	44.4	-	.71	-
22	60.0	49.2	46.4	44.1	44.0	.28	-
23	58.3	48.3	46.8	44.0	43.8	.48	31.52
24	57.1	49.2	45.4	44.0	43.0	.91	-
25	56.9	56.9	-	47.8	44.0	.82	-
26	54.3	52.8	49.6	46.0	45.4	.81	-
27	55.3	53.8	47.7	45.1	45.1	31.93	-
28	55.4	52.7	48.6	46.0	45.2	32.25	-
29	54.0	53.9	52.4	46.1	45.0	32.11	-
30	55.0	54.3	48.0	46.0	44.6	31.71	32.31
Mean	54.3	49.9	46.5	44.1	43.3	31.65	32.05

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

July 1957

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	55.8	55.2	49.7	44.1	42.7	31.86	-
2	56.5	55.0	52.8	47.1	45.0	.84	-
3	56.3	55.2	52.7	45.8	43.6	.74	-
4	56.7	56.2	52.5	46.7	-	31.87	-
5	57.9	53.3	51.7	45.5	-	32.19	-
6	56.2	50.7	48.5	45.4	-	31.82	-
7	56.5	52.4	49.0	45.2	44.1	.97	32.30
8	57.8	51.1	50.1	45.9	-	.93	-
9	55.1	53.2	47.1	44.6	44.3	.96	-
10	57.3	52.7	49.4	45.0	44.7	31.92	-
11	56.8	47.4	46.1	45.1	44.4	32.00	-
12	-	-	-	-	-	31.91	-
13	55.2	50.4	48.0	45.2	44.7	32.00	-
14	56.8	52.1	46.9	45.7	44.6	32.05	32.33
15	-	-	-	-	-	31.64	-
16	61.3	50.8	48.1	-	-	.87	-
17	62.7	52.8	48.4	46.3	-	.58	-
18	63.9	52.4	49.6	46.6	46.4	.76	-
19	63.2	53.6	50.1	-	-	.70	-
20	63.3	52.0	-	-	-	31.84	-
21	64.8	52.6	49.3	46.9	-	32.37	31.28
22	61.8	53.8	50.0	46.1	-	31.05	-
23	62.1	-	50.3	47.5	-	.12	-
24	63.9	55.1	51.1	47.4	-	.60	-
25	62.7	55.0	49.3	-	-	.86	-
26	61.6	52.0	49.8	47.0	45.7	.83	-
27	63.8	58.0	51.0	47.3	47.0	.73	-
28	62.7	51.2	49.4	47.3	46.4	.60	31.57
29	-	-	-	-	-	.72	-
30	59.8	52.4	49.7	47.4	44.9	.88	-
31	64.2	55.9	52.0	48.1	45.2	31.72	-
Mean	59.9	53.1	49.7	46.2	44.9	31.80	31.87

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

August 1957

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	64.5	54.5	52.5	47.5	46.0	31.93	-
2	-	56.2	52.0	48.2	-	.84	-
3	65.0	54.4	51.7	48.4	-	.52	-
4	62.0	56.0	52.0	48.0	46.0	.75	31.65
5	63.0	56.8	53.2	48.8	46.0	.41	-
6	63.5	57.0	52.1	-	-	.36	-
7	63.0	56.0	52.0	47.7	46.0	.74	-
8	61.0	53.2	52.0	49.0	46.0	.56	-
9	62.0	55.0	51.0	48.5	-	.18	-
10	63.0	56.5	52.0	-	-	.57	-
11	62.3	56.0	52.0	48.8	-	.45	31.41
12	-	57.4	55.0	48.9	46.1	.27	-
13	61.1	56.8	52.4	49.0	47.2	.28	-
14	61.0	58.9	54.1	49.2	-	.23	-
15	59.4	56.0	53.3	48.5	-	.82	-
16	61.0	57.2	52.9	50.0	-	.72	-
17	-	-	-	-	-	.85	-
18	-	57.5	53.3	49.0	46.2	.80	32.30
19	-	59.2	52.7	49.2	-	.72	-
20	61.5	57.5	53.5	49.9	-	.86	-
21	62.5	61.2	57.2	-	-	.88	-
22	-	61.6	57.1	51.6	-	.92	-
23	62.7	60.5	53.0	50.1	-	.88	-
24	-	-	-	-	-	.92	-
25	61.5	59.0	51.2	-	-	.93	-
26	62.8	62.4	60.0	51.4	49.9	.90	-
27	64.0	63.2	-	50.8	49.2	31.99	-
28	62.9	62.4	61.8	51.2	48.2	32.00	-
29	61.0	60.0	53.7	50.2	48.0	.06	-
30	61.0	60.2	54.5	50.0	-	.13	-
31	62.0	60.0	56.0	50.5	-	32.11	
Mean	62.2	58.0	53.7	49.4	47.1	31.73	-

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

September 1957

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	61.2	57.0	55.8	50.8	48.8	32.11	-
2	61.1	59.1	55.7	51.2	49.6	.06	-
3	59.7	59.8	57.1	49.9	48.0	.00	-
4	60.0	57.8	55.1	49.7	48.6	.00	-
5	58.7	53.9	49.8	48.5	47.5	.02	-
6	59.0	54.2	51.0	49.0	47.6	.42	-
7	59.0	54.1	50.8	49.1	-	.26	-
8	57.8	53.8	52.5	49.3	47.1	.26	-
9	58.1	55.2	52.0	48.6	47.3	.26	-
10	59.0	54.9	52.3	49.2	47.0	.27	-
11	54.7	54.5	52.0	46.3	45.2	.31	-
12	58.0	54.4	52.9	49.0	47.8	.30	-
13	58.0	54.1	52.2	49.2	48.7	.33	-
14	55.8	49.8	47.8	45.8	44.5	.24	-
15	-	-	-	-	-	.30	-
16	59.1	-	52.8	50.1	49.2	.46	-
17	58.0	56.9	54.0	49.8	48.5	.34	-
18	-	54.5	52.4	50.0	48.2	.30	-
19	59.0	58.2	56.0	50.9	48.7	.33	-
20	57.0	57.0	51.7	50.1	48.5	.33	-
21	58.2	56.5	52.1	49.4	-	.22	-
22	58.0	51.9	50.9	49.2	48.3	.22	-
23	56.1	52.3	50.2	48.7	-	.31	-
24	55.5	54.9	51.5	48.6	-	.35	-
25	56.0	54.2	51.6	49.5	47.5	.73	-
26	54.0	53.0	50.4	48.5	47.5	.57	-
27	53.1	52.6	51.4	49.8	47.9	.57	-
28	52.1	51.9	51.5	48.2	46.9	.66	-
29	53.0	51.5	51.3	49.1	47.8	.74	-
30	52.8	51.3	50.7	49.7	-	32.45	-
Mean	57.2	54.6	52.3	49.2	47.8	32.32	-

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

October 1957

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	52.2	50.4	47.8	46.7	-	32.42	-
2	-	-	-	-	-	.68	-
3	50.9	50.8	48.2	46.8	45.0	.75	-
4	51.1	51.1	50.9	46.9	44.4	.60	-
5	53.2	52.5	50.7	47.5	45.8	.60	-
6	53.0	51.8	50.2	47.6	45.7	.61	-
7	-	-	-	-	-	.58	-
8	52.0	51.8	51.6	48.9	47.2	.54	-
9	53.0	52.4	52.2	49.2	47.5	.25	-
10	52.6	51.8	50.9	47.8	-	.63	-
11	52.3	51.9	49.3	47.8	46.5	.67	-
12	51.8	51.5	50.4	48.2	-	.29	-
13	51.0	51.1	50.6	48.2	-	.39	-
14	51.1	51.1	50.2	48.8	-	.50	-
15	51.8	50.8	50.1	49.1	-	.50	-
16	51.1	50.9	49.8	-	-	.42	-
17	51.8	51.2	50.4	-	-	.42	-
18	51.6	51.1	50.9	49.2	-	.48	-
19	51.9	51.4	51.1	49.8	-	.40	-
20	51.2	51.2	51.0	49.1	-	.51	32.84
21	50.9	50.9	50.6	49.8	-	.79	-
22	50.2	50.2	50.1	49.1	-	.65	-
23	49.9	49.8	49.8	48.8	-	.58	-
24	49.9	50.1	49.9	48.2	-	.64	-
25	50.5	50.5	50.0	46.8	-	32.82	-
26	49.8	49.8	49.8	48.7	-	33.30	-
27	48.9	48.8	48.8	47.6	46.6	32.83	-
28	49.0	48.9	48.9	47.7	46.6	.77	-
29	48.3	48.1	48.1	46.8	-	.76	-
30	-	-	-	-	-	.69	-
31	48.8	48.7	48.8	48.3	-	32.63	-
Mean	51.1	50.7	50.0	48.2	-	32.60	-

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

November 1957

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	50.7	50.4	50.3	49.2	-	32.77	-
2	50.0	50.0	50.0	49.2	-	.58	-
3	50.0	49.7	49.5	49.8	-	.25	32.78
4	50.0	49.9	49.8	49.3	-	.42	-
5	49.5	49.3	49.3	49.4	-	.22	-
6	49.1	49.2	49.2	49.1	-	.51	-
7	49.2	49.2	49.2	48.9	-	.12	-
8	49.0	49.2	48.9	48.9	-	32.26	-
9	-	-	-	-	-	-	-
10	47.4	47.4	47.6	47.3	-	32.68	32.98
11	46.6	46.6	46.8	47.0	46.2	.74	-
12	46.2	46.2	46.2	46.8	46.5	.74	-
13	46.2	46.2	46.2	46.8	46.5	.51	-
14	46.1	46.1	46.1	46.8	46.1	.59	-
15	46.8	46.8	46.7	46.6	46.2	.58	-
16	47.0	46.8	46.8	46.7	46.2	.59	-
17	46.8	46.3	46.4	46.4	-	.54	33.12
18	46.9	46.7	46.8	46.7	46.2	.60	-
19	-	-	-	-	-	.60	-
20	46.8	46.8	46.7	46.3	46.1	.67	-
21	46.1	46.1	46.1	46.1	46.1	.71	-
22	46.2	46.2	46.2	46.3	46.3	.63	-
23	45.6	45.7	45.8	46.1	46.0	.83	-
24	45.8	45.8	45.9	46.1	45.9	32.89	33.16
25	45.8	45.7	45.7	45.9	45.9	33.01	-
26	44.8	45.1	45.2	45.2	45.3	32.97	-
27	44.8	44.9	45.1	44.8	44.9	.91	-
28	44.4	44.4	44.5	45.2	45.1	.82	-
29	43.9	44.1	44.2	45.1	45.5	.73	-
30	42.0	42.0	42.1	42.9	43.2	32.83	-
Mean	46.9	46.9	46.9	47.0	-	32.63	33.01

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

December 1957

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	44.2	44.2	44.3	44.4	44.7	32.93	33.16
2	43.9	43.9	43.9	44.0	43.7	.89	-
3	43.1	43.1	43.1	43.1	43.2	32.94	-
4	42.7	42.7	42.7	42.8	42.8	33.01	-
5	43.3	43.3	43.3	42.8	42.8	.02	-
6	42.2	42.2	42.2	42.2	42.1	33.02	-
7	42.2	42.2	42.2	42.5	42.5	32.96	-
8	41.9	41.9	41.9	42.0	42.2	.93	33.13
9	42.3	42.3	42.3	42.1	41.9	.95	-
10	42.3	42.3	42.3	42.3	-	32.99	-
11	42.8	42.8	42.8	42.8	42.7	33.06	-
12	42.1	42.1	42.2	42.2	-	32.99	-
13	41.1	41.1	41.2	41.9	-	.96	-
14	40.8	40.8	40.9	41.5	42.0	.93	-
15	40.1	40.3	40.8	41.0	42.1	.83	33.09
16	40.9	40.9	40.9	41.4	42.0	.84	-
17	41.1	41.2	41.2	41.7	42.1	.94	-
18	39.7	39.7	39.7	40.0	41.0	.89	-
19	40.8	40.8	40.8	40.7	-	.23	-
20	40.5	40.2	40.2	-	-	.20	-
21	40.9	40.9	41.0	41.2	-	.84	-
22	40.9	40.9	41.0	-	-	.83	32.76
23	40.9	40.9	40.9	41.2	41.5	.80	-
24	40.9	40.9	41.0	41.7	-	.76	-
25	-	-	-	-	-	32.96	-
26	-	-	-	-	-	-	-
27	41.3	41.3	41.4	41.5	41.8	32.98	-
28	39.2	40.0	40.1	41.2	41.8	.64	-
29	40.1	40.1	40.1	40.8	41.9	32.80	33.07
30	40.2	40.7	40.8	41.2	-	31.14	-
31	39.1	40.4	40.3	-	-	30.93	-
Mean	41.4	41.5	41.6	41.9	42.4	32.74	33.04

Boston Lightship (Figure 4, Table 4)

The 1957 surface water temperatures in terms of 10 day means were generally higher than the mean for the 1925-1941 period and were for the most part above the 1956 readings. 1957 was characterized by early warming, an early maximum in late July and, except for a brief period in the fall, by slower than normal cooling. The thermocline began to develop in late March and was destroyed by early November; in structure it was very similar to that of the previous year. The annual mean surface temperature was 50.0 degrees or 1.4 degrees higher than in 1956.

Salinities held higher and more uniform than in 1956. The minimum at the surface was about 31.7 °/oo in May with the maxima in January, February, March and December of 32.5 °/oo; this gives a range of less than 1.0 °/oo contrasted with a range of 2.0 °/oo the previous year. As in 1956 bottom salinities were .50 to .75 °/oo higher than the surface during the period of the thermocline.

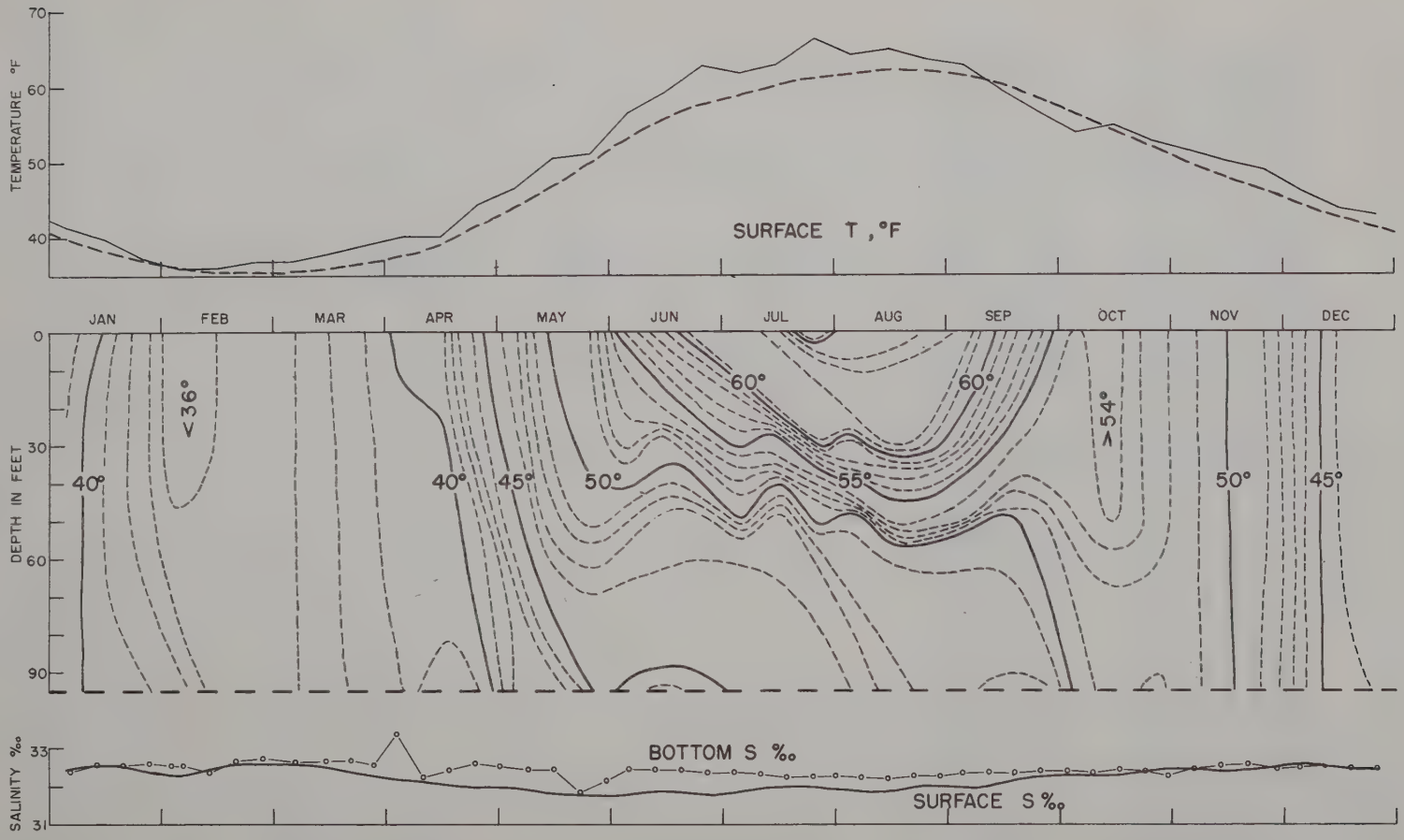

Figure 4. Boston Lightship, 1957. (Dashed line in upper diagram, mean for period 1925-1941)

Table 4

BOSTON LIGHTSHIP 42°20.4'N. 70°45.5'W. Depth of water - 96 feet

1957

	January						February					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	39.6	39.5	39.5	39.5	32.17	-	37.3	37.3	37.3	39.8	32.30	-
2	38.9	38.5	38.3	38.3	.16	-	38.1	38.1	38.1	38.1	.31	-
3	45	-	-	-	.33	-	32.8	32.9	32.9	35.6	32.31	32.55
4	43.0	43.0	43.3	44.1	.25	-	35.9	36.1	37.7	39.1	31.99	-
5	42.9	42.9	42.9	42.9	.49	-	35.9	35.9	35.9	37.9	32.46	-
6	43.1	43.0	43.0	43.1	.56	32.40	36.8	36.1	36.1	37.8	32.36	32.57
7	41	-	-	-	.46	-	35.8	35.9	35.9	38.7	32.26	-
8	42	-	-	-	.51	-	35.8	35.9	35.9	39.0	32.30	-
9	40.5	-	-	-	.63	-	34.9	35.1	36.2	38.2	32.01	-
10	37.8	37.7	37.8	37.5	.49	-	35.2	35.1	35.1	38.8	32.00	-
11	36.4	36.4	36.3	36.3	.52	-	35.8	35.8	35.8	38.2	32.14	-
12	42.2	42.2	42.2	42.2	.50	-	35.8	35.9	35.9	38.0	32.21	-
13	40.9	40.9	40.9	40.9	.51	32.57	35.9	35.9	36.0	36.4	32.33	32.37
14	35.3	35.3	35.3	35.5	.41	-	36.1	36.1	36.1	36.3	32.42	-
15	41.0	41.0	41.0	41.1	.53	-	35.8	35.9	36.0	36.0	32.42	-
16	41.6	41.5	41.4	41.3	.51	-	35.8	35.9	35.9	36.2	32.46	-
17	36.9	37.5	37.5	37.5	.57	-	36.2	36.4	36.4	36.5	32.53	-
18	36.0	36.0	36.0	35.9	.59	-	36.0	36.0	36.0	36.0	32.56	-
19	40.0	40.1	40.1	40.1	.58	-	36.4	36.5	36.5	36.8	32.59	-
20	38.9	38.9	38.9	38.9	.58	32.57	36.7	-	-	-	32.62	32.67
21	40.8	40.8	40.8	41.5	.55	-	36.8	36.8	36.8	36.8	32.66	-
22	39.2	39.2	39.6	41.2	.42	-	36.5	36.5	36.5	36.5	32.59	-
23	38.3	38.3	38.4	39.4	.55	-	36.3	36.3	36.3	36.3	32.51	-
24	39.3	39.3	39.4	39.4	.46	-	36.6	36.6	36.6	36.6	32.60	
25	38.4	39.4	40.0	40.8	.39	-	-	-	-	-	32.53	-
26	38.7	38.7	38.8	40.9	.45	-	37.1	37.1	37.1	37.0	32.53	-
27	38.7	39.0	39.0	40.8	.42	32.62	37.1	37.1	37.1	37.0	32.38	32.71
28	33.1	33.2	33.3	35.7	.53	-	37.1	37.1	37.1	-	32.56	-
29	37.3	38.0	38.3	41.4	.26	-						
30	32.7	32.5	33.0	34.8	.30	-						
31	33.8	33.8	34.0	36.0	32.22	-						
Mean	39.5	38.8	38.9	39.5	32.45	32.54	36.2	36.2	36.3	37.3	32.39	32.57

Note: From 19 Feb - 13 June T at intermediate depths was read from proportions of trace depths as BT had water in bellows.

Table 4 (cont'd)

BOSTON LIGHTSHIP 42°20.4'N. 70°45.5'W. Depth of water - 96 feet

1957

	March						April					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	-	-	-	-	-	-	40.8	40.2	39.6	39.1	32.00	-
2	36.9	36.9	36.9	36.9	-	-	41.0	40.0	39.2	38.9	32.01	-
3	36.7	36.8	-	-	-	-	39.9	39.8	39.7	39.0	32.19	33.38
4	36.7	36.8	-	-	-	-	39.9	39.8	39.6	38.9	32.23	-
5	36.6	36.6	36.5	-	-	-	39.9	39.9	39.8	39.6	32.13	-
6	36.7	36.7	36.7	-	-	-	40.1	39.9	39.7	39.1	31.88	-
7	37.3	37.2	37.1	36.9	-	-	40.2	40.0	39.9	39.0	32.30	-
8	37.7	37.7	36.9	36.6	-	-	39.9	39.8	39.7	38.8	32.24	-
9	36.8	36.8	36.7	36.6	-	-	39.8	39.8	39.8	39.0	32.21	-
10	36.9	36.9	36.9	36.8	-	-	39.5	39.5	39.3	39.1	32.24	32.24
11	37.1	37.1	36.9	36.8	-	-	39.9	39.5	39.4	39.2	32.20	-
12	37.4	37.1	37.0	36.9	-	-	40.0	39.7	39.2	39.0	32.15	-
13	38.3	37.2	37.1	37.1	-	-	39.4	39.4	39.4	38.8	32.10	-
14	37.6	37.9	37.8	37.2	-	-	39.6	39.4	39.2	39.0	32.10	-
15	37.9	37.9	37.8	37.5	-	-	39.5	39.4	39.2	39.1	32.15	-
16	38.4	38.2	38.0	37.8	-	-	39.9	39.8	39.6	38.8	32.17	-
17	38.1	38.1	37.9	37.8	-	-	40.0	39.2	39.1	38.2	32.06	32.42
18	39.0	38.8	38.5	38.1	-	-	40.0	39.2	39.2	38.2	32.07	-
19	38.4	38.3	38.2	37.9	-	-	41.2	40.0	39.2	38.1	31.97	-
20	-	-	-	-	-	-	41.2	40.5	39.4	38.0	31.70	-
21	38.6	38.3	38.2	37.9	-	-	41.8	41.5	39.5	-	31.80	-
22	38.4	38.1	38.0	37.9	-	-	43.0	42.5	39.2	38.4	31.89	-
23	38.9	38.3	38.1	37.9	-	-	43.4	42.5	40.8	38.3	31.81	-
24	39.0	38.4	38.2	37.8	-	-	44.0	43.1	42.7	38.5	31.92	32.60
25	38.5	38.4	38.3	38.1	-	-	44.0	44.0	39.5	38.5	32.00	-
26	39.2	38.9	38.8	38.2	-	-	45.0	44.7	40.0	38.6	31.90	-
27	38.9	38.9	38.8	38.2	-	-	45.0	43.0	39.9	38.3	31.88	-
28	39.6	39.1	38.9	38.8	-	-	45.7	44.0	40.9	38.9	32.03	-
29	39.7	39.2	38.8	38.5	-	-	46.5	43.0	41.0	39.0	32.05	-
30	39.3	39.2	39.2	38.7	-	-	45.4	45.1	44.8	39.0	32.04	-
31	39.4	39.2	39.1	39.0	-	-						
Mean	38.1	37.9	37.8	37.7	-	-	41.5	40.9	39.9	38.8	32.05	32.66

Note: From 19 Feb - 13 June T at intermediate depths was read from proportions of trace depths as BT had water in bellows.

Table 4 (cont'd)

BOSTON LIGHTSHIP 42°20.4'N. 70°45.5'W. Depth of water - 96 feet

1957

	May						June					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	45.3	45.1	44.0	38.9	-	-	55.7	54.8	50.0	45.7	31.70	-
2	45.7	45.3	44.9	39.6	-	-	56.9	55.1	49.5	44.9	.68	-
3	45.1	45.0	45.0	44.1	-	-	56.7	53.5	49.5	44.5	.68	-
4	44.7	44.0	43.5	42.2	-	-	57.0	53.8	48.5	44.1	.66	-
5	44.4	44.2	43.9	42.5	-	-	57.1	52.5	47.5	43.8	.74	32.44
6	46.1	45.2	44.8	43.1	-	-	57.3	51.5	46.8	44.5	.76	-
7	47.0	44.8	44.2	42.9	-	-	56.6	55.5	47.5	43.9	.79	-
8	48.6	47.8	46.5	43.5	-	-	56.8	51.1	48.0	44.0	.79	-
9	48.4	46.0	44.5	42.2	-	-	56.5	50.2	47.0	44.1	.88	-
10	49.6	48	45	43.0	-	-	54.4	49.8	45.2	44.1	.90	-
11	-	-	-	-	-	-	56.0	53.5	47.5	44.0	.88	-
12	48.8	48.6	47.0	43.6	-	-	57.3	50.5	46.8	44.1	.92	32.44
13	49.4	48.6	47.5	43.0	-	-	56.4	52.0	47.0	44.7	.81	-
14	-	-	-	-	-	-	56.9	50.0	44.5	42.8	31.95	-
15	50.8	49.0	45.9	41.0	-	-	57.7	47.1	43.3	43.0	32.01	-
16	51.2	50.9	45.5	-	-	-	59.8	50.0	46.0	43.0	31.75	-
17	51.3	47.5	45.0	41.5	-	-	60.8	50.0	46.2	43.2	.73	-
18	51.2	48.2	46.9	41.0	-	-	61.7	51.2	47.1	43.4	.75	-
19	51.2	51.1	50.5	-	-	-	62.5	50.3	46.2	43.3	.82	32.41
20	50.1	50.0	49.8	-	-	-	64.1	52.0	46.9	43.6	.88	-
21	48.1	48.0	48.0	47.9	-	-	62.0	51.7	46.2	43.5	.63	-
22	50.1	49.4	49.1	48.2	-	-	63.3	59.4	48.0	44.0	.70	-
23	49.7	49.6	49.1	-	-	-	62.2	55.6	47.1	44.1	.82	-
24	52.2	50.0	48.0	42.0	-	-	61.3	51.8	46.2	44.0	.82	-
25	50.3	50.2	49.6	43.2	-	-	62.0	51.8	46.3	43.8	.85	-
26	50.9	50.7	49.0	43.5	-	-	64.6	54.8	45.8	44.3	.81	32.35
27	50.7	50.5	49.8	46.1	-	-	63.9	56.6	48.9	44.6	.79	-
28	51.7	50.0	48.0	44.2	-	-	65.2	53.4	45.0	45.0	.82	-
29	51.8	51.5	-	-	-	-	61.0	47.5	45.0	44.5	.79	-
30	52.2	51.9	51.7	44.9	-	-	61.0	50.2	45.8	44.0	31.88	-
31	53.1	52.0	49.0	44.7	-	-						
Mean	49.3	48.4	47.0	43.2	-	-	59.5	52.2	46.8	44.0	31.80	32.41

Note: From 19 Feb- 13 June T at intermediate depths was read from proportions of trace depths as BT had water in bellows.

Table 4 (cont'd)

BOSTON LIGHTSHIP 42°20.4'N. 70°45.5'W. Depth of water - 96 feet

1957

	July						August					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	61.1	59.1	51.6	44.8	31.87	-	62.5	54.6	50.1	44.9	31.66	-
2	60.7	59.9	52.7	45.2	.74	-	64.0	58.0	49.7	46.1	.73	-
3	61.3	60.8	-	45.8	.82	32.38	63.0	56.2	50.0	46.0	.86	-
4	63.1	59.9	57.9	46.0	.83	-	61.9	53.8	47.7	46.0	.85	-
5	61.7	54.8	48.0	45.8	.82	-	63.0	57.8	48.5	46.1	.88	-
6	60.9	53.0	49.8	45.8	.93	-	64.3	62.9	49.1	45.9	.91	-
7	62.0	49.8	48.1	45.6	.92	-	64.8	60.0	49.8	46.2	.93	32.21
8	64.5	51.0	47.8	45.8	.92	-	66.0	62.2	48.8	46.7	.95	-
9	61.4	53.2	46.9	45.4	.92	-	66.0	63.5	49.5	46.7	.93	-
10	60.5	53.5	46.8	45.1	31.98	32.30	66.2	57.0	48.0	46.8	.95	-
11	61.0	54.5	47.8	45.2	32.03	-	66.0	-	52.8	47.0	.96	-
12	61.7	53.0	47.1	45.6	32.00	-	66.5	61.8	54.2	47.1	.77	-
13	62.2	51.8	46.2	45.7	32.00	-	65.3	62.9	51.8	47.5	.75	-
14	61.3	53.0	46.6	45.2	31.87	-	63.8	61.2	56.4	47.8	.76	32.19
15	62.2	54.3	46.9	45.2	32.04	-	63.9	62.3	51.5	47.8	.86	-
16	63.9	55.0	49.1	44.9	31.88	-	64.2	62.8	55.0	47.8	.88	-
17	63.9	52.2	45.9	44.9	.90	32.24	64.2	62.8	57.7	48.1	.91	-
18	65.0	58.1	50.5	45.1	.84	-	65.0	63.2	60.3	47.9	.91	-
19	64.1	54.7	47.0	44.9	.90	-	65.0	63.8	57.1	48.0	.95	-
20	65.0	60.5	50.1	45.0	.97	-	65.0	59.0	50.2	47.6	31.97	-
21	66.5	62.0	49.0	45.0	31.93	-	63.2	60.7	50.2	48.2	32.02	32.27
22	65.5	61.5	48.4	45.2	32.00	-	62.9	62.3	50.5	48.4	.06	-
23	67.1	54.6	49.9	45.2	31.97	-	64.9	63.2	55.2	48.7	32.00	-
24	66.8	60.9	51.0	45.8	.99	32.26	64.3	63.7	55.0	48.2	31.94	-
25	67.5	62.8	49.6	45.7	31.97	-	64.1	62.8	50.3	47.8	.97	-
26	68.2	66.8	62.5	46.6	32.00	-	63.4	62.7	55.0	48.5	.91	-
27	66.4	63.0	48.3	46.3	32.00	-	64.2	63.3	54.5	48.3	31.93	-
28	65.6	62.2	50.5	46.2	31.94	-	63.6	56.0	50.0	48.3	32.00	32.26
29	65.5	61.2	49.3	46.8	.88	-	62.7	60.5	57.7	49.8	31.94	-
30	64.9	60.0	51.3	44.9	.88	-	62.8	62.2	53.8	50.0	32.02	-
31	65.2	55.0	48.5	45.2	31.95	32.28	62.8	60.2	56.5	49.7	32.00	-
Mean	63.7	57.1	49.2	45.5	31.93	32.29	64.2	60.8	52.5	47.5	31.91	32.23

Table 4 (cont'd)

BOSTON LIGHTSHIP 42° 20.4'N. 70°45.5'W. Depth of water - 96 feet

1957

	September						October					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	62.7	61.3	58.7	49.3	31.85	-	53.2	52.8	52.5	49.1	32.24	-
2	63.6	61.8	60.5	48.5	.88	-	53.9	53.1	52.8	49.6	.23	32.39
3	62.6	62.2	60.8	47.8	.90	-	52.2	52.2	52.1	49.2	.28	-
4	64.7	60.0	52.2	48.3	.90	32.31	54.1	54.0	53.0	49.8	.27	-
5	63.7	61.3	53.0	47.9	.92	-	54.1	53.2	51.9	50.2	.26	-
6	63.3	57.0	51.5	47.8	.92	-	54.0	52.8	51.9	50.3	.26	-
7	63.0	59.0	52.6	47.8	.95	-	53.8	53.6	52.7	50.9	.20	-
8	60.6	54.8	49.1	47.9	.86	-	54.0	53.9	53.9	52.2	.21	-
9	62.1	56.1	49.7	48.2	.95	-	54.7	54.4	54.3	53.2	.27	32.33
10	62.0	54.7	49.9	48.1	.93	-	55.3	54.9	54.6	53.0	.27	-
11	59.2	51.9	48.3	47.3	32.00	32.35	54.9	54.9	54.7	52.9	.22	-
12	56.9	51.5	49.2	47.5	.08	-	54.7	54.4	54.3	53.6	.25	-
13	59.0	52.2	49.5	47.0	.02	-	54.9	54.6	54.3	52.5	.31	-
14	60.4	53.2	49.8	47.3	.06	-	54.3	54.1	54.1	52.8	.31	-
15	60.7	53.9	52.1	47.8	32.00	-	54.8	54.1	53.9	51.6	.33	-
16	59.7	53.8	48.5	47.3	31.99	-	54.8	54.2	54.1	52.1	.33	32.41
17	59.0	55.5	48.8	47.4	32.06	-	55.0	54.7	54.1	-	.29	-
18	59.3	58.3	51.7	47.9	.07	32.33	55.1	54.5	53.6	51.0	.27	-
19	58.6	54.0	48.2	47.9	.09	-	54.8	54.6	53.7	50.5	.22	-
20	61.2	58.4	52.4	47.8	.09	-	54.2	54.1	53.3	50.2	.32	-
21	62.2	56.0	50.0	47.7	.10	-	53.9	53.6	53.5	-	.35	-
22	61.7	50.2	48.9	47.3	.10	-	53.1	53.0	53.0	49.5	.34	-
23	57.8	55.4	50.3	47.3	.18	-	53.4	53.1	53.1	50.7	.35	32.37
24	55.9	52.2	48.9	47.3	.19	-	53.3	53.2	53.2	50.7	.31	-
25	56.0	53.9	51.1	47.8	.10	32.38	53.2	53.2	53.2	48.2	.25	-
26	55.1	54.2	49.2	47.6	.21	-	53.0	52.9	52.9	51.1	.34	-
27	55.1	55.1	-	47.8	.32	-	52.1	52.1	52.1	52.1	.35	-
28	53.7	53.1	52.3	47.9	.30	-	51.9	51.9	51.9	51.8	.35	-
29	54.7	53.8	53.2	-	.30	-	51.5	51.2	51.2	51.2	.36	32.35
30	53.2	53.0	52.9	-	32.25	-	51.8	51.8	51.7	51.2	.35	-
31							51.2	51.2	51.2	51.2	32.36	-
Mean	59.6	55.6	51.5	47.8	32.05	-	53.7	53.4	53.1	51.1	32.29	32.37

Table 4 (cont'd)

BOSTON LIGHTSHIP 42°20.4'N. 70°45.5'W. Depth of water - 96 feet

1957

	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	51.8	51.7	51.7	51.7	32.42	-	46.9	47.0	47.0	47.1	32.44	-
2	51.7	51.6	51.6	51.6	.42	-	45.1	45.1	45.1	45.1	.50	-
3	51.8	51.8	51.8	51.7	.42	-	-	-	-	-	.57	-
4	-	-	-	-	.41	-	46.9	46.9	46.9	46.9	.48	32.48
5	51.7	51.7	51.7	51.6	.42	-	-	-	-	-	.50	-
6	51.6	51.5	51.5	51.5	.47	32.44	-	-	-	-	.62	-
7	51.2	51.1	51.1	51.1	.44	-	46.7	46.7	46.8	46.8	.66	-
8	51.5	51.2	51.2	51.2	.47	-	45.9	46.1	46.0	45.9	.65	-
9	51.4	51.3	51.2	50.2	.38	-	45.3	45.3	45.3	45.4	.53	-
10	50.5	50.3	50.3	49.9	.40	-	45.9	45.9	45.8	45.5	.52	-
11	50.0	49.9	49.9	49.9	.48	-	45.9	46.0	45.9	45.6	.56	32.56
12	49.8	49.8	50.0	-	.46	-	45.3	45.3	45.3	45.3	.60	-
13	50.0	49.9	50.0	-	.48	32.52	43.9	43.9	43.9	43.7	.48	-
14	49.8	50.2	50.3	-	.39	-	44.8	44.8	44.9	44.8	.58	-
15	50.1	50.1	50.1	-	.30	-	-	-	-	-	.51	-
16	50.1	50.1	50.2	-	.36	-	-	-	-	-	.44	-
17	50.1	50.1	50.1	-	.32	-	-	-	-	-	.48	-
18	50.1	49.9	50.0	-	.45	-	43.1	43.1	43.1	43.2	.45	32.49
19	50.0	49.9	49.9	49.9	.38	-	42.1	42.1	42.2	-	.31	-
20	50.2	50.2	50.1	49.3	.29	32.57	42.2	42.5	42.5	44.2	.38	-
21	49.9	49.9	49.9	49.4	.32	-	42.3	42.4	42.4	-	.30	-
22	49.8	49.8	49.8	49.1	.37	-	42.5	42.3	42.4	-	.29	-
23	49.3	49.3	49.5	48.8	.39	-	42.7	42.8	42.8	-	.38	-
24	49.2	49.3	49.3	-	.40	-	44.1	44.1	44.3	-	.39	-
25	49.0	49.1	49.0	48.8	.44	-	43.1	43.1	43.1	43.1	.48	32.47
26	49.1	49.1	49.1	48.7	.44	-	42.4	42.8	43.7	43.8	.33	-
27	48.3	48.3	48.4	47.9	.49	32.48	43.2	43.3	43.5	44.2	.55	-
28	48.8	48.8	48.6	48.6	.49	-	43.1	43.1	43.1	43.9	.55	-
29	48.6	48.8	48.8	48.7	.42	-	42.9	42.9	43.0	44.1	.44	-
30	48.5	48.4	48.4	-	.46	-	43.5	43.4	43.6	44.6	.52	-
31							43.5	43.5	43.7	43.9	32.46	-
Mean	50.1	50.1	50.1	50.0	32.41	32.50	44.1	44.2	44.3	44.9	32.48	32.50

Georges Shoal, Texas Tower #2 (Figure 5, Table 5)

Ten day mean surface water temperatures ranged from a minimum of 40.4°F in mid-February to a high of 64.2°F in mid-September.

Comparison with the 1956 readings, which began in April of that year, shows the mean for the same period in 1957 to be 2.7°F higher. This year warming began abruptly during the last 10 days of April, nearly a month earlier than in 1956. All the 10 day mean values for 1957 from the end of April through the first 10 days of December were above the comparable values for 1956. Beginning in mid-November, cooling was more rapid in 1957.

It is regrettable that there were so few salinity samples taken in 1957. What values there are give means of greater than 33.0 °/oo.

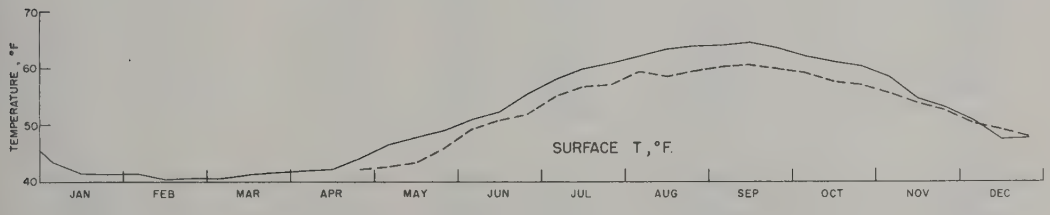

Figure 5. Georges Shoal, 1957. (Dashed line, 1956 record.)

Table 5

[illegible] 44°11'26.3"N. 67°45'36.2"W. Depth of water - 56 feet

Surface Temperature °F

1957

Month / Day	Jan Temp	Jan Sal	Feb Temp	Feb Sal	Mar Temp	Mar Sal	April Temp	April Sal	May Temp	May Sal
1	[illegible]	-	[illegible]	-	39.3	33.00	[illegible]	-	[illegible]	-
2	[illegible]	-	[illegible]	-	40.5	33.09	[illegible]	-	[illegible]	-
3	[illegible]	-	[illegible]	-	[illegible]	33.07	[illegible]	-	[illegible]	-
4	[illegible]	-	[illegible]	-	40.5	33.06	[illegible]	-	[illegible]	-
5	[illegible]	-	[illegible]	-	39.9	33.08	[illegible]	-	[illegible]	-
6	[illegible]	-	[illegible]	-	40.0	33.12	[illegible]	-	[illegible]	-
7	[illegible]	-	[illegible]	-	40.3	33.12	[illegible]	-	[illegible]	-
8	[illegible]	-	[illegible]	-	40.4	33.13	[illegible]	-	[illegible]	-
9	[illegible]	-	[illegible]	-	42.0	33.16	[illegible]	-	[illegible]	-
10	[illegible]	-	[illegible]	-	[illegible]	[illegible]	[illegible]	-	[illegible]	-
11	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-	[illegible]	-
12	[illegible]	-	[illegible]	-	[illegible]	33.20	[illegible]	-	[illegible]	-
13	[illegible]	-	[illegible]	-	[illegible]	33.21	[illegible]	-	[illegible]	-
14	[illegible]	-	[illegible]	-	[illegible]	33.22	[illegible]	-	[illegible]	-
15	[illegible]	-	[illegible]	-	[illegible]	33.07	[illegible]	-	[illegible]	-
16	[illegible]	-	[illegible]	-	[illegible]	33.29	[illegible]	-	[illegible]	-
17	[illegible]	-	[illegible]	33.11	[illegible]	33.12	[illegible]	-	[illegible]	-
18	[illegible]	-	-	32.93	[illegible]	33.13	[illegible]	-	[illegible]	-
19	[illegible]	-	39.7	33.02	[illegible]	33.12	42.3	-	[illegible]	-
20	[illegible]	-	[illegible]	32.91	-	33.10	42.3	-	[illegible]	33.04
21	[illegible]	-	[illegible]	32.98	[illegible]	33.07	42.6	-	[illegible]	33.03
22	[illegible]	-	[illegible]	32.99	[illegible]	33.04	42.8	-	[illegible]	33.00
23	[illegible]	-	[illegible]	33.01	[illegible]	33.06	42.8	-	[illegible]	33.02
24	[illegible]	-	[illegible]	33.01	[illegible]	33.78	43.8	-	[illegible]	33.01
25	[illegible]	-	[illegible]	33.02	[illegible]	33.04	43.3	-	[illegible]	33.12
26	[illegible]	-	[illegible]	33.02	[illegible]	33.11	43.6	-	[illegible]	33.01
27	[illegible]	-	[illegible]	33.02	[illegible]	33.11	[illegible]	-	[illegible]	33.11
28	[illegible]	-	39.9	33.02	[illegible]	33.14	45.6	-	[illegible]	33.02
29	[illegible]	-			[illegible]	33.20	45.7	-	[illegible]	33.01
30	[illegible]	-			[illegible]	33.18	45.4	-	[illegible]	-
31	[illegible]	-			[illegible]	33.13			[illegible]	-
Mean	[illegible]	-	[illegible]	-	[illegible]	33.17	42.6	-	[illegible]	-

Table 5 (cont'd)

TEXAS TOWER #2 41°41'16.3"N. 67°45'36.2"W. Depth of water - 56 feet
GEORGES SHOAL

Surface Temperature °F

1957

Month / Day	June Temp	July Temp	Aug Temp	Sept Temp	Oct Temp	Nov Temp	Dec Temp
1	50.1	57.3	61.2	63.3	62.2	60.0	52.4
2	50.3	57.6	61.5	63.3	62.1	60.0	52.2
3	50.8	57.7	61.6	63.2	61.8	60.0	52.0
4	50.8	57.8	61.8	63.2	61.7	59.6	52.0
5	50.6	57.8	61.7	63.6	61.8	58.1	51.8
6	50.7	58.1	61.8	64.0	61.7	57.5	51.4
7	51.0	58.1	61.8	64.0	61.6	57.1	50.4
8	51.0	58.2	61.7	64.0	61.6	57.0	49.2
9	51.2	58.2	62.0	64.0	61.6	57.0	48.2
10	51.2	58.3	62.6	64.0	61.6	56.9	47.6
11	51.3	58.3	62.6	64.1	61.5	56.5	47.6
12	51.4	58.7	62.7	64.1	61.3	55.8	47.5
13	51.5	59.3	62.7	64.2	61.2	55.1	47.1
14	51.7	59.6	62.6	64.2	61.2	54.4	47.2
15	51.8	59.9	62.8	64.1	61.2	54.1	47.5
16	51.9	60.1	63.0	64.2	60.7	53.9	47.5
17	52.0	60.2	63.2	64.2	60.7	53.8	47.6
18	52.8	60.2	63.4	64.2	60.6	53.6	47.4
19	53.0	60.3	63.7	64.2	60.6	53.7	47.4
20	53.2	60.3	63.8	64.1	60.4	53.7	47.3
21	53.3	60.3	63.8	64.2	60.3	53.5	47.3
22	54.0	60.2	63.7	64.1	60.4	53.5	47.3
23	54.8	60.2	63.7	64.0	60.4	53.4	47.4
24	54.8	60.2	63.6	64.0	60.2	53.4	47.4
25	55.4	60.2	63.5	63.8	60.0	53.2	47.3
26	55.7	60.4	63.5	63.1	60.0	52.9	47.4
27	55.9	60.8	63.6	62.4	60.0	52.8	47.8
28	56.1	61.2	63.4	62.1	60.0	52.6	47.8
29	56.3	61.3	63.3	62.1	60.0	52.6	47.8
30	56.6	61.2	63.4	62.2	60.0	52.6	47.8
31		61.1	63.3		60.0		47.8
Mean	52.7	59.4	62.8	63.7	60.9	55.3	48.5

Nantucket Shoal Lightship (Figure 6, Table 6)

Unfortunately the data from this important station are thin and scattered after mid-April.

It is probably safe to say that the surface winter minimum appeared in mid-February with temperatures averaging greater than 38°F; a similar minimum was observed in early March the previous year. Below 100 feet temperatures fell to less than 36°F in February, with an intrusion of cold water at depth. Just previous to this time DELAWARE cruise 57-1 made bathythermograph lowerings in South Channel, over Georges Bank and in the region surrounding the lightship. No water of 35°F was found either at the surface or at depth, except near Browns Bank and Eastern Channel 200 miles to the east. Thus it appears possible that the 35° water observed at this station in February was formed well inshore where chilling had advanced more rapidly, and moved offshore in a southeasterly direction along the bottom. Since its appearance at the lightship was preceded and followed by isothermal conditions at 40°F, one assumes this parcel of chilled water simply moved by down the slope.

The partial data for August and September shown in Table 6 indicate summer temperatures well above the mean for 1947-1952.

Late winter and early spring salinities are like those for the same period in 1956.

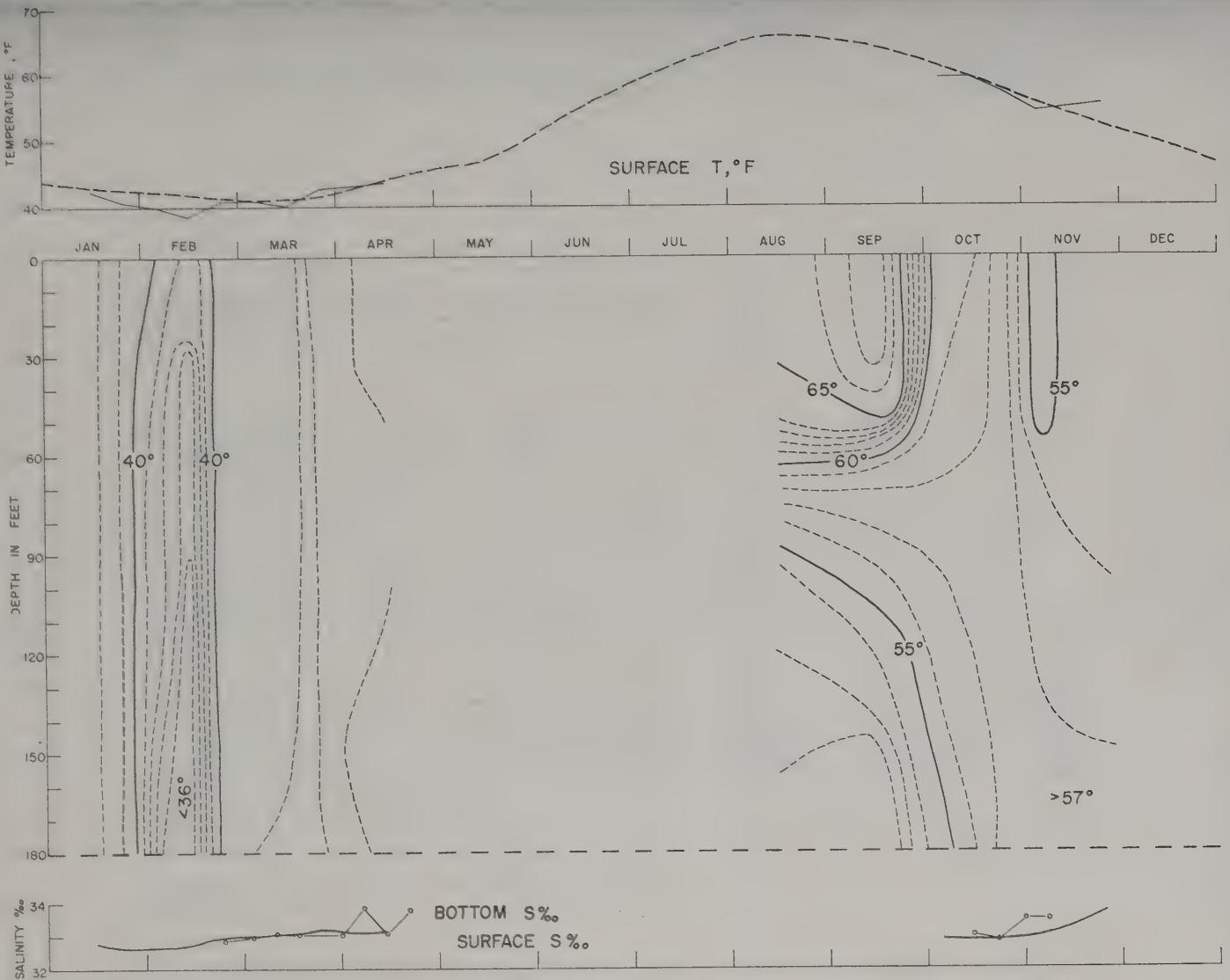

Figure 6. Nantucket Lightship, 1957. (Dashed line in upper diagram, mean for period 1947-1952, 8 miles WSW of present position)

Table 6

NANTUCKET SHOALS LIGHTSHIP 40°33'00"N. 69°28'00"W. Depth of water-192 feet

January 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-
9	43.0	43.0	43.2	43.3	43.3	43.3	33.07	-
10	43.3	43.2	43.2	43.2	43.2	43.2	32.73	-
11	-	-	-	-	-	-	-	-
12	42.6	43.0	43.0	43.0	43.0	43.0	.73	-
13	44	-	-	-	-	-	.77	-
14	42.6	42.7	42.7	42.8	42.8	42.8	.76	-
15	42.0	42.1	42.1	42.1	42.2	42.2	.74	-
16	-	-	-	-	-	-	-	-
17	41.6	41.7	41.9	41.9	41.9	41.9	.71	-
18	41.8	41.9	42.0	42.0	42.0	42.0	.74	-
19	-	-	-	-	-	-	-	-
20	40.9	40.9	40.9	40.9	40.9	40.9	.73	-
21	40.7	40.7	40.7	40.7	40.7	40.7	.73	-
22	40.0	40.0	40.0	40.0	40.0	40.0	.66	-
23	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-
26	39.7	39.5	39.5	39.6	39.6	39.6	.62	-
27	39.1	39.3	39.3	39.5	39.7	39.8	.54	-
28	42.1	41.8	41.9	42.0	42.1	42.1	.64	-
29	42.2	42.1	42.1	42.1	42.1	42.1	.66	-
30	40.6	40.6	40.5	40.7	40.7	40.7	.56	-
31	41	-	-	-	-	-	32.72	-

Table 6 (cont'd)

NANTUCKET SHOALS LIGHTSHIP 40°33'00"N. 69°28'00"W. Depth of water-192 feet

February 1957

	Temperature °F						Salinity °/oo	
Depth / Day	0'	30'	50'	100'	150'	180'	0'	180'
1	40.7	39.9	39.6	38.3	36.6	-	32.64	-
2	39.0	37.3	37.0	36.5	-	-	32.63	-
3	41.7	40.8	40.2	39.5	34.3	-	32.60	-
4	42.5	42.1	41.7	40.6	39.0	-	32.60	-
5	-	-	-	-	-	-	-	-
6	41.5	40.7	39.2	38.5	37.6	36.9	32.65	-
7	40.7	40.2	39.9	39.0	38.3	-	32.64	-
8	38	37.4	37.3	36.7	34.6	34.3	32.64	-
9	39.0	37.5	37.7	37.3	36.6	35.1	32.66	-
10	37.0	37.0	37.0	36.7	36.0	35.5	32.60	-
11	33.5	34.0	34.3	34.6	34.7	34.7	32.60	-
12	40.0	37.7	36.5	35.5	35.4	35.2	32.78	-
13	-	-	-	-	-	-	-	-
14	37.0	36.0	36.0	35.5	35.0	34.8	32.78	-
15	-	-	-	-	-	-	-	-
16	45.8	40.6	39.8	37.8	36.3	36.2	32.76	-
17	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-
19	37.3	35.5	35.0	35.0	36.0	36.1	32.76	-
20	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-
23	41.5	41.3	41.2	41.3	41.3	41.3	33.00	-
24	41.0	41.0	41.0	41.0	41.0	40.9	32.94	32.84
25	39.6	39.0	39.0	39.0	39.0	39.0	32.89	-
26	41.8	41.5	41.4	41.5	41.5	41.6	32.90	-
27	41.2	41.2	41.2	41.2	41.2	41.2	32.91	-
28	40.0	40.0	40.0	40.0	40.0	40.0	33.21	-
Mean	39.9	39.0	38.8	38.3	37.6	37.5	32.76	-

Table 6 (cont'd)

NANTUCKET SHOALS LIGHTSHIP 40°33'00"N. 69°28'00"W. Depth of water-192 feet

March 1957

Day	Temperature °F 0'	30'	50'	100'	150'	180'	Salinity °/oo 0'	180'
1	-	-	-	-	-	-	-	-
2	42.0	42.0	42.0	42.0	42.0	42.0	32.92	-
3	41.9	41.9	41.9	41.9	-	-	33.00	32.96
4	37.2	36.7	36.6	37.0	37.3	-	32.98	-
5	41.6	41.6	41.6	41.7	41.7	41.7	32.96	-
6	41.2	40.6	40.5	40.2	40.2	40.2	32.99	-
7	42.0	41.8	41.8	41.8	41.8	41.8	33.05	-
8	41.0	41.0	41.0	41.0	40.9	40.9	32.94	-
9	40.6	40.6	40.6	40.6	40.6	40.6	33.04	-
10	41.7	41.7	41.6	41.6	41.5	-	33.02	33.04
11	39.0	39.0	39.0	39.0	-	-	33.01	-
12	39.9	39.9	39.9	39.9	-	-	33.01	-
13	39.0	38.7	38.8	38.9	-	-	33.11	-
14	41.2	41.2	41.2	-	-	-	33.02	-
15	39.3	39.3	39.3	39.3	39.3	-	33.00	-
16	41.3	41.3	41.3	41.2	41.2	41.2	33.09	-
17	42.2	42.2	42.2	42.0	41.8	41.8	32.98	33.02
18	38.2	38.0	38.0	38.0	-	-	32.98	-
19	40.7	40.7	40.6	40.5	40.9	-	32.93	-
20	-	-	-	-	-	-	-	-
21	41.6	41.6	41.6	41.6	41.4	41.2	32.94	-
22	43.8	43.2	43.0	42.9	42.9	42.9	33.03	-
23	44.0	43.0	42.9	42.9	42.9	42.9	33.52	-
24	43.7	42.8	42.5	42.3	42.2	42.2	-	-
25	41.7	41.6	41.3	41.2	41.0	41.0	33.16	-
26	43.0	43.0	43.0	42.9	42.9	42.9	32.95	-
27	40.2	40.2	40.2	40.2	40.1	40.1	33.59	-
28	42.8	42.2	42.1	42.1	42.1	42.1	33.05	-
29	43.7	43.5	43.2	43.1	43.0	43.0	33.28	-
30	43.7	43.3	43.3	43.2	43.2	-	33.23	-
31	41.1	41.2	41.2	-	-	-	33.11	33.02
Mean	41.4	41.2	41.1	41.1	41.4	41.7	33.08	33.01

Table 6 (cont'd)

NANTUCKET SHOALS LIGHTSHIP 40°33'00"N. 69°28'00"W. Depth of water-192 feet

April 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	43.8	43.6	42.6	42.3	42.3	42.5	33.07	-
2	-	-	-	-	-	-	-	-
3	41.5	41.4	41.3	41.1	42.7	41.8	33.02	-
4	42.0	41.8	41.8	42.6	43.0	43.1	32.96	-
5	41.1	41.1	41.1	41.1	41.4	41.3	33.04	-
6	43.1	43.0	43.0	42.8	42.8	-	33.04	-
7	42.9	42.9	42.9	42.8	47.0	-	33.05	33.83
8	45.8	45.8	45.8	45.6	45.9	-	33.34	-
9	-	-	-	-	-	-	-	-
10	44.0	44.0	43.9	44.0	44.1	44.1	33.15	-
11	39.3	39.3	39.3	39.1	43.5	43.9	33.23	-
12	45.0	44.9	44.8	45.0	45.0	45.0	33.11	-
13	42.0	42.1	42.1	42.2	42.2	-	33.07	-
14	38.5	38.5	38.6	38.0	38.3	-	33.09	33.08
15	42.5	41.4	41.3	41.3	41.8	41.9	33.09	-
16	44.4	44.0	43.5	43.5	43.5	43.5	33.25	-
17	44.2	44.2	44.2	44.0	44.0	44.0	33.31	-
18	44.2	44.1	44.3	44.9	45.0	45.0	33.04	-
19	46.5	46.5	45.7	45.5	45.4	45.5	33.32	-
20	47.5	46.4	45.7	45.8	45.5	45.5	33.23	-
21	44.7	44.5	43.0	42.7	46.0	46.7	33.24	33.76
22	45.9	45.0	44.7	44.2	44.2	44.1	33.05	-
23	45.0	44.9	44.0	43.3	43.5	43.5	33.04	-
24	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-

Table 6 (cont'd)

NANTUCKET SHOALS LIGHTSHIP 40°33'00"N. 69°28'00"W. Depth of water-192 feet

August 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-
7	60.5	59.9	51.9	45.3	-	-	33.02	-
8	66.0	64.8	59.0	51.3	50.1	49.9	.17	-
9	66.8	65.5	58.7	51.0	50.1	49.8	33.19	-
10	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-
12	68.3	67.5	59.0	51.9	49.4	49.3	33.34	-
13	64.8	64.8	64.3	53.6	52.8	52.5	32.82	-
14	64.9	64.9	64.7	53.8	52.8	52.3	33.30	-
15	64.6	64.7	64.9	53.3	52.3	52.0	.26	-
16	-	64.6	64.2	53.9	52.7	52.2	.22	-
17	64.8	64.9	65.1	53.2	52.3	52.1	.25	-
18	64.7	64.7	64.7	53.5	52.3	52.1	.30	-
19	64.8	64.9	64.8	53.1	52.1	52.0	33.38	-
20	-	-	-	-	-	-	-	-
21	65.2	65.0	65.1	52.7	52.1	52.1	33.23	-
22	-	-	-	-	-	-	-	-
23	64.8	64.8	65.0	53.3	52.3	52.0	33.24	-
24	64.5	64.5	63.8	53.9	52.9	52.2	.24	-
25	67.9	66.9	66.4	52.9	51.1	51.1	.78	-
26	67.8	66.9	66.4	53.0	52.1	52.0	33.74	-
27	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-

Table 6 (cont'd)

NANTUCKET SHOALS LIGHTSHIP 40°33'00"N. 69°28'00"W. Depth of water-192 feet

September 1957

Day	Temperature °F						Salinity °/oo	
Depth	0'	30'	50'	100'	150'	180'	0'	180'
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13	68.6	67.6	65.0	55.0	51.0	51.0	33.15	-
14	68.7	67.9	67.0	55.7	50.9	50.9	.12	-
15	69.4	67.6	65.0	54.9	51.2	51.2	33.15	-
16	-	-	-	-	-	-	-	-
17	68.2	66.7	66.0	55.5	51.2	51.1	33.02	-
18	66.7	66.7	64.9	55.0	51.2	51.2	.05	-
19	67.1	67.2	64.1	55.1	51.1	51.1	.36	-
20	66.9	66.5	63.3	57.1	51.1	51.1	.28	-
21	67.2	65.0	63.2	56.6	51.1	51.1	.34	-
22	-	-	-	-	-	-	33.31	-
23	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-
26	65.5	62.0	60.5	54.8	53.0	53.0	32.85	-
27	56.2	56.2	56.2	55.4	53.8	53.8	.80	-
28	56.0	55.9	55.9	54.1	53.7	53.5	.79	-
29	56.9	56.2	55.9	55.9	54.9	54.9	.77	-
30	57.4	56.9	57.1	54.7	54.2	54.2	32.88	-
Mean	-	-	-	-	-	-	-	

Table 6 (cont'd)

NANTUCKET SHOALS LIGHTSHIP 40°33'00"N. 69°28'00"W. Depth of water-192 feet

October 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	58.4	58.8	57.0	56.2	55.2	54.3	32.84	-
2	57.3	57.3	57.2	56.1	55.1	54.2	.66	-
3	57.0	57.0	57.0	56.9	54.4	54.1	.67	-
4	56.8	57.0	56.9	56.6	55.2	54.9	.66	-
5	-	-	-	-	-	-	32.99	-
6	-	-	-	-	-	-	-	-
7	60.9	60.4	60.2	56.8	55.7	54.9	33.05	-
8	61.7	60.8	60.7	57.9	55.6	55.6	32.98	-
9	60.8	60.7	60.0	55.6	55.5	55.3	.91	-
10	61.7	61.0	60.9	58.8	55.1	55.1	.99	-
11	60.1	60.2	60.2	59.3	54.8	54.7	.91	-
12	59.9	59.9	59.9	57.0	55.3	55.1	.93	-
13	58.9	59.0	58.8	57.1	56.0	55.5	.93	-
14	58.1	57.8	57.8	57.5	57.1	56.8	.85	32.98
15	59.9	58.9	57.3	57.1	56.9	56.7	.94	-
16	59.4	57.8	57.9	57.0	56.7	56.3	.89	-
17	58.6	57.1	57.0	57.0	56.9	56.8	.65	-
18	59.3	57.6	57.2	57.1	57.1	56.3	32.69	-
19	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-
21	57.1	57.1	57.1	57.1	57.1	57.0	32.79	-
22	57.4	57.1	57.1	57.2	57.2	57.1	.74	32.84
23	57.6	57.6	57.4	57.4	57.6	57.7	.91	-
24	57.6	57.5	57.5	57.4	57.7	57.7	32.89	-
25	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-
30	57.4	57.9	57.9	58.3	58.7	58.8	33.25	33.45
31	55.6	56.1	57.3	58.1	58.2	58.9	32.64	-
Mean	58.7	58.4	58.2	57.2	56.3	56.1	32.86	33.09

Table 6 (cont'd)

NANTUCKET SHOALS LIGHTSHIP 40°33'00"N. 69°28'00"W. Depth of water-192 feet

November 1957

Day	Temperature °F						Salinity °/oo	
Depth	0'	30'	50'	100'	150'	180'	0'	180'
1	55.4	55.7	55.7	55.8	56.4	56.4	33.14	-
2	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-
4	55.9	56.0	56.2	56.6	56.9	56.9	33.12	-
5	-	-	-	-	-	-	-	-
6	53.7	53.9	54.0	57.6	57.6	57.8	32.84	-
7	-	-	-	-	-	-	.91	33.47
8	53.7	53.8	53.9	57.1	58.1	58.1	32.85	-
9	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-
11	53.1	53.1	53.2	55.9	57.2	57.2	33.04	-
12	53.2	53.2	53.3	55.9	57.3	57.3	33.05	-
13	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	32.94	-
18	-	-	-	-	-	-	33.37	-
19	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-
21	55.7	55.8	55.8	55.9	58.1	58.2	33.50	-
22	-	-	-	-	-	-	.70	-
23	55.7	55.9	56.1	57.3	57.4	57.5	33.72	-
24	-	-	-	-	-	-	-	-
25	55.1	55.2	55.6	56.1	56.6	56.8	33.76	-
26	55.2	55.2	55.3	56.1	56.6	56.6	33.75	-
27	56.1	56.1	56.1	56.2	56.9	57.9	34.04	-
28	-	-	-	-	-	-	-	-
29	53.9	54.0	54.1	55.0	57.4	57.9	33.54	-
30	-	-	-	-	-	-	-	-
Mean	-	-	-	-	-	-	-	-

Table 6 (cont'd)

NANTUCKET SHOALS LIGHTSHIP 40° 33'00"N. 69° 28'00"W. Depth of water-192 feet

December 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-
3	53.8	54.3	54.9	55.1	57.7	57.9	33.40	-
4	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-
17	47.3	47.6	47.7	47.9	48.2	48.2	32.89	-
18	-	-	-	-	-	-	-	-
19	47.3	47.2	47.2	47.2	47.3	47.3	32.88	-
20	48.4	48.4	48.5	48.7	49.1	49.1	33.00	-
21	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-
23	51.3	51.3	51.6	51.7	51.8	51.8	33.63	-
24	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-
26	51.1	51.1	51.2	51.2	51.3	51.3	33.95	-
27	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-
30	50.5	50.7	50.9	51.0	51.2	51.2	33.52	-
31	-	-	-	-	-	-	-	-
Mean	-	-	-	-	-	-	-	-

Woods Hole, Massachusetts (Figure 7, Table 7)

The mean for the year 1956 at Woods Hole was 53.2°F, making it the third warmest year for the period of record, beginning in 1883. (See Bumpus, 1957, a.) The means for 1951 and 1953 were 53.5° and 53.6° respectively.

The year was characterized by early warming beginning in February, high temperatures in the early summer and a decline beginning in mid-August somewhat sooner than usual. Autumn temperatures remained above the mean, but became comparable to last year's after the middle of October.

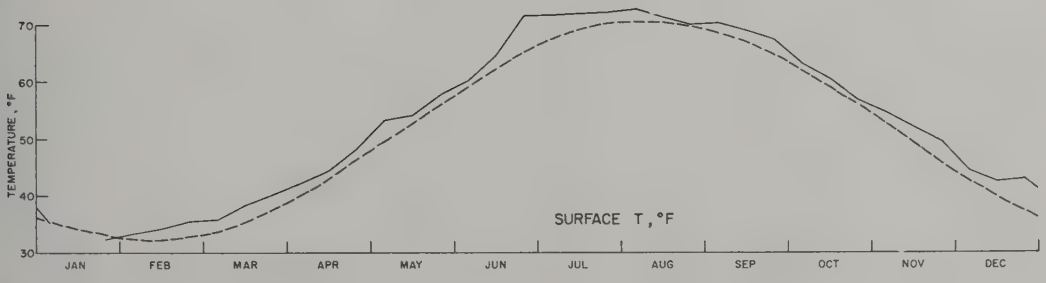

Figure 7. Woods Hole, 1957. (Dashed line, mean for period 1880-1956)

Table 7

WOODS HOLE, MASSACHUSETTS 41°31'N. 70°40'W.

Surface Temperature, °F - 1957

Month / Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann
1	-	33.5	35.5	41.	51.2	-	71.5	72.	-	64.5	55.	-	
2	36.2	-	-	42.5	50.5	-	70.5	72.2	-	64.2	-	46.5	
3	35.5	-	-	42.	50.5	59.	71.	-	70.	63.	-	45.5	
4	35.2	33.2	36.5	42.	-	60.	-	-	71.	62.5	55.	45.	
5	-	33.	35.5	41.5	-	60.2	-	72.	70.	-	55.	43.2	
6	-	33.5	36.	-	51.5	61.	-	73.2	71.2	-	54.2	42.5	
7	34.5	33.5	35.5	-	52.0	60.5	-	74.	-	62.0	54.	-	
8	34.5	33.5	36.	42.5	55.4	-	72.2	72.5	-	62.5	54.5	-	
9	35.	-	-	42.5	57.0	-	71.	73.	70.	-	-	44.5	
10	35.2	-	-	42.5	58.0	-	73.2	-	69.	63.0	-	44.5	
11	33.5	-	37.	43.	-	-	74.2	-	68.7	61.0	-	44.5	
12	-	34.	36.7	45.	-	-	72.	72.	69.	-	-	43.5	
13	-	33.7	38.7	-	53.8	62.5	-	71.5	70.	-	-	42.	
14	-	34.	39.	-	54.6	63.2	-	71.	-	-	51.	-	
15	-	34.	38.5	44.5	54.1	-	72.	71.	-	60.0	52.	-	
16	-	-	-	44.5	54.5	-	71.	71.	70.	60.5	-	42.	
17	-	-	-	44.2	-	65.2	71.5	-	69.5	-	-	42.	
18	29.7	34.2	39.5	44.5	-	64.	71.	-	69.	60.5	51.5	41.5	
19	-	34.7	39.	-	-	65.	71.5	71.	68.7	-	52.5	42.	
20	-	34.2	38.5	-	53.5	67.2	-	71.2	67.5	-	53.	42.5	
21	30.5	34.	39.	-	53.5	68.	-	71.7	-	58.2	51.5	-	
22	31.5	-	39.	46.5	54.5	-	74.	70.5	-	58.5	51.2	-	
23	33.5	-	-	47.5	57.5	-	73.	70.	69.	58.5	-	43.5	
24	32.5	-	-	48.	58.2	72.	72.5	-	68.	58.5	-	43.5	
25	32.7	35.5	39.	48.	-	73.	71.5	-	68.	58.5	49.2	-	
26	-	35.5	40.	47.	-	73.	71.	70.2	67.5	-	48.5	-	
27	-	37.	41.	-	58.5	70.	-	70.	65.7	-	47.	-	
28	32.5	35.7	41.5	-	61.	73.	-	69.5	-	54.2	-	-	
29	32.		41.5	49.5	59.	-	71.5	69.5	-	54.5	-	43.	
30	32.5		-	51.2	-	-	71.5	69.	67.	54.7	-	42.2	
31	32.7		-		59.5		72.	-		55.0		43.	
Mean	33.3	34.3	38.2	44.8	55.2	65.7	71.9	71.3	68.9	59.7	52.2	43.3	53.2

Buzzards Lightship (Figure 8, Table 8)

Surface water temperatures stayed substantially above the mean for Vineyard Sound Lightship throughout the year, and above those for 1956 until the first part of November, when the two became comparable. The annual mean temperature of 52.3°F was higher than any for the period of record (1879-1910) at Vineyard Sound Lightship, which was stationed less than four miles away from the position of the present Buzzards Bay Lightship.

Ten day mean salinity values showed a high of 32.80 ‰ in mid-October and a low of only 32.07 ‰ in mid-April. This contrasted with a 1956 high of 32.36 ‰ and a low of 31.42 ‰. This difference reflects the low precipitation and runoff of 1957.

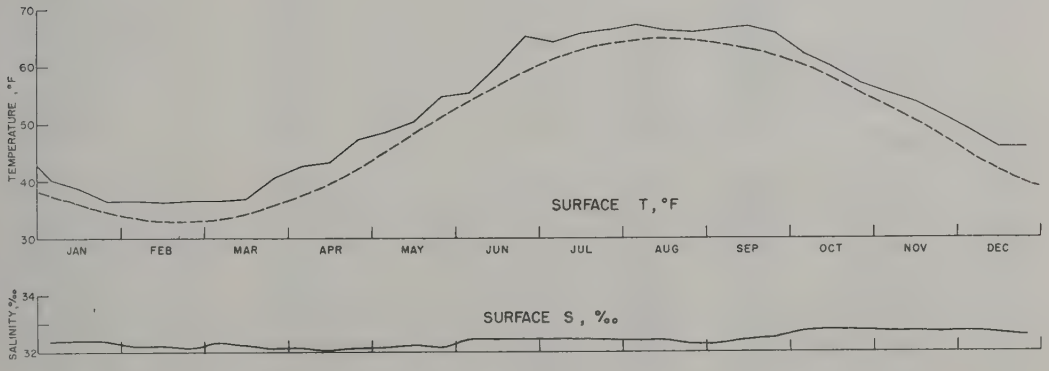

Figure 8. Buzzards Lightship, 1957. (Dashed line, mean for Vineyard Sound Lightship, 1878-1910)

Table 8

BUZZARDS LIGHTSHIP 41°24'00"N. 71°03'00"W. Depth of water - 74 feet

Surface Water - 1957

Month / Day	January		February		March		April	
	T°F	Sal°/oo	T°F	Sal°/oo	T°F	Sal °/oo	T°F	Sal°/oo
1	43.	32.30	36.	32.23	37.	32.39	40.	32.20
2	42.	.48	37.	.22	37.	.33	43.	.08
3	42.	.56	36.	.34	37.	.26	45.	.23
4	42.	-	38.	.26	37.	.34	43.	.22
5	40.	.26	37.	.19	36.	.30	40.	.22
6	38.	-	37.	.25	38.	.29	40.	.31
7	39.	.44	35.	.11	38.	.43	43.5	32.19
8	38.	.19	36.	.07	36.	.39	46.	31.82
9	39.	.24	36.	32.21	34.	.19	43.	32.26
10	39.	.30	38.	-	35.	.35	42.	.08
11	39.	.24	36.	32.17	36.	.26	41.	.04
12	43.	.48	36.	.32	37.	.23	46.	.04
13	43.	.71	36.	-	36.	.07	42.5	32.17
14	40.	.48	36.	.28	36.	.30	45.	32.02
15	39.	.28	36.	-	37.	.44	42.	31.98
16	36.	.37	37.	.30	37.	.30	42.5	32.13
17	36.	.34	37.	.28	38.	.37	42.7	31.99
18	39.	.41	36.	.08	37.	.29	43.	31.91
19	37.	.32	36.	.08	38.	.34	44.	32.21
20	35.	.30	37.	.17	37.	.25	44.	32.20
21	34.	.50	36.	.06	37.	32.17	51.	31.84
22	39.	.46	37.	.08	39.	31.93	45.5	32.17
23	38.	.50	37.	.06	41.	32.10	46.5	32.22
24	39.	.33	37.	.06	42.	.10	46.5	31.95
25	36.	.26	37.	.11	42.	32.04	50.	32.16
26	35.	.43	37.	.16	40.	31.98	46.5	32.20
27	37.	.35	36.	.28	40.	32.22	46.	32.24
28	36.	.31	36.	32.24	42.	.36	46.5	32.23
29	35.	.48			42.	.24	47.5	32.21
30	36.	.35			42.	.38	47.0	32.19
31	36.	32.22			40.	32.30		
Mean	38.4	32.38	36.5	32.18	38.1	32.26	44.4	32.12

Table 8 (cont'd)

BUZZARDS LIGHTSHIP 41°24'00"N. 71°03'00"W. Depth of water - 74 feet

Surface Water - 1957

Month / Day	May		June		July		August	
	T°F	Sal°/oo	T°F	Sal°/oo	T°F	Sal°/oo	T°F	Sal°/oo
1	47.5	32.24	54.	32.48	65.	32.37	68.	32.39
2	47.5	.19	55.	.31	65.	.47	67.	.39
3	47.5	.19	55.	.40	65.	.44	68.	.46
4	47.5	.27	54.	.24	65.	.37	70.	.46
5	47.5	.27	57.	.55	65.	.40	66.	.42
6	47.9	.22	57.	.53	65.	.46	67.	.48
7	48.5	.19	57.	.55	64.	.68	67.	.52
8	50.0	.10	55.	32.53	64.	.46	66.	.53
9	50.0	.11	54.	-	63.	.42	67.	.42
10	51.0	.12	56.	32.52	63.	.48	67.	.50
11	48.5	.21	58.	.48	67.	.45	67.	.36
12	48.5	.35	58.5	.41	64.	.52	67.	.42
13	50.0	.28	55.	.49	65.	.46	65.	.44
14	49.0	.30	54.	.51	66.	.40	66.	.44
15	49.6	.15	58.	.46	65.	.49	67.	.47
16	50.	.27	61.	.42	64.	.42	67.	.31
17	53.	.24	63.	.31	68.	.46	66.	.33
18	52.	.22	63.5	.53	68.	.46	66.	.35
19	51.	.26	64.	.53	65.	.36	66.	.30
20	51.	.35	65.	.54	66.	.43	66.	.37
21	54.5	.25	63.5	.48	67.	.43	67.	.31
22	53.5	.06	64.	.42	67.	.43	67.	.28
23	52.7	.10	63.	.45	66.	.42	66.	.45
24	53.5	.11	65.	.41	66.	.43	65.	.38
25	55.5	.02	63.	.48	67.	.43	66.	.34
26	55.0	.11	66.	.41	66.	.44	65.	.15
27	54.8	.11	68.	.47	66.	.42	66.	.19
28	54.	.26	66.	.49	66.	.42	66.	.26
29	59.	32.26	68.	.46	66.	.40	65.	.26
30	56.	32.44	66.	32.47	67.	.44	66.	.30
31	53.	32.45			68.	32.39	67.	32.26
Mean	51.3	32.20	60.2	32.46	65.6	32.44	66.5	32.37

Table 8 (cont'd)

BUZZARDS LIGHTSHIP 41°24'00"N. 71°03'00"W. Depth of water - 74 feet

Surface Water - 1957

Month / Day	September		October		November		December	
	T°F	Sal°/oo	T°F	Sal°/oo	T°F	Sal°/oo	T°F	Sal°/oo
1	67.	32.27	65.	32.87	56.	32.74	50.	32.64
2	68.	.30	64.	.71	55.	.73	51.	.75
3	67.	.19	63.	.76	55.	.69	52.	.93
4	68.	.10	63.	.76	55.	.72	49.	.79
5	67.	.30	62.	.75	56.	.71	47.	.75
6	67.	.24	62.	.84	55.	.71	47.	.67
7	67.	.40	61.	.80	56.	.73	47.	.69
8	66.	.25	61.	.73	56.	.76	48.	.72
9	64.5	.44	61.	.79	56.	.68	48.	.64
10	65.	.46	61.	.74	55.	.77	47.	.68
11	66.	.44	61.	32.72	54.	.74	48.	.66
12	67.	.48	60.	33.00	53.	.76	47.	.56
13	67.	.44	60.	32.74	53.	.84	45.	.57
14	67.	.44	60.	.78	54.	.71	45.	.60
15	68.	.42	59.	.83	54.	.67	45.	.55
16	67.	.42	60.	.77	54.	.71	45.	.63
17	68.	.37	60.	.78	54.	.70	48.	.55
18	67.	.48	60.	.78	54.	.70	44.	.56
19	67.	.43	60.	.78	54.	.68	46.	.67
20	67.	.55	60.	.79	54.	.65	46.	.72
21	67.	.46	58.	.76	53.	.66	46.	.56
22	67.	.45	59.	.79	53.	.80	46.	.64
23	66.	.40	59.	.78	52.	.66	46.	.69
24	66.	.48	59.	.81	54.	.80	46.	.65
25	66.	.50	59.	.80	52.	.66	45.	.66
26	66.	.48	58.	.74	50.	.72	45.	.62
27	65.	.50	57.	.73	49.	.71	46.	.73
28	-	.58	56.	.74	50.	.66	49.	.49
29	65.	.58	56.	.78	51.	.66	48.	.40
30	65.	32.58	54.	.76	50.	32.71	44.	.52
31			53.	32.80			44.	32.51
Mean	66.6	32.41	59.7	32.78	53.6	32.71	46.7	32.64

Kingston, Rhode Island (Figure 9, Table 9)

Surface temperatures at the Narragansett Marine Laboratory Pier are compared with the mean for the period 1878-1943 at Brenton Reef Lightship, which is 4.5 miles SSE of the pier in 90 fathoms of water. As should be expected the shoal inshore water has a greater temperature range, being colder in winter and warmer in summer than the offshore waters.

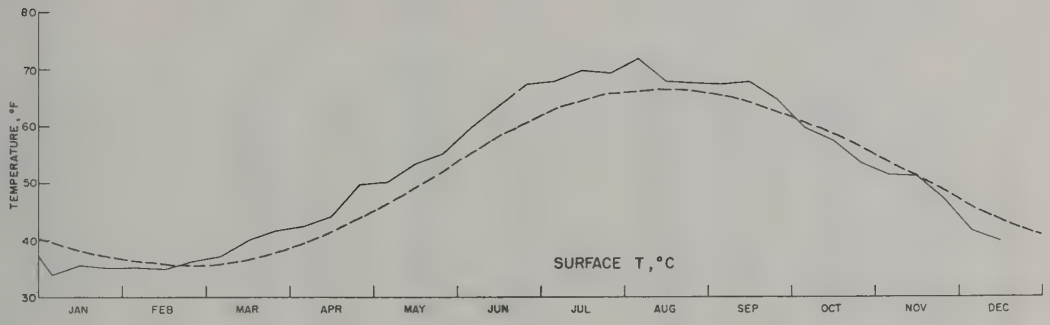

Figure 9. Kingston, R. I., 1957. (Dashed line, mean for Brenton Reef Lightship, 1878-1943)

Table 9

Kingston, R. I.* 41°29' 32"N. 71°25' 10"W

Surface Water Temperature °C.

1957

Month / Day	January		February		March		April	
	Max.	Min.	Max.	Min.	Max.	Min	Max.	Min.
1	3.6	2.6	2.5	1.1	2.8	2.4	6.6	5.1
2	3.7	1.6	2.0	0.7	3.2	2.1	6.0	5.1
3	3.2	1.0	2.1	0.8	3.2	2.6	6.4	5.5
4	2.9	1.1	2.2	1.5	3.1	2.5	6.1	5.5
5	2.0	0.5	2.0	1.2	3.4	2.2	5.7	5.2
6	0.7	-0.2	2.1	1.3	3.4	2.2	6.1	5.3
7	0.2	-0.5	2.0	1.5	2.9	2.5	6.4	5.1
8	0.9	-0.9	2.3	1.6	3.0	2.9	6.5	6.0
9	0.5	-0.8	2.2	1.6	3.2	3.0	6.3	5.6
10	0.8	-0.5	2.4	2.0	3.6	2.9	6.1	5.1
11	-	-	2.2	1.7	3.7	2.6	7.3	5.1
12	4.4	0.9	1.6	1.2	3.7	3.2	8.5	5.6
13	4.6	1.7	1.6	1.0	4.5	4.2	7.1	5.6
14	4.3	1.3	1.9	1.5	5.0	4.1	6.8	5.6
15	3.6	1.0	1.7	1.3	4.9	4.0	7.7	5.6
16	3.2	0.1	1.7	1.1	5.2	4.1	7.7	5.0
17	3.7	0.0	1.9	1.2	5.7	4.1	7.0	5.6
18	3.0	0.0	2.2	1.3	5.5	4.5	8.2	6.0
19	2.5	0.0	2.2	1.5	5.0	4.6	9.0	7.1
20	2.3	0.0	2.2	1.3	4.7	4.3	8.6	6.9
21	2.4	0.9	2.0	1.5	5.0	4.0	9.3	6.7
22	2.8	1.6	2.1	1.5	5.6	4.5	10.4	9.0
23	4.0	3.1	2.0	1.6	5.5	4.5	10.1	8.6
24	3.1	2.0	2.5	1.6	5.9	5.0	11.5	8.5
25	2.4	0.6	3.2	2.0	6.6	5.0	12.4	9.1
26	1.4	-0.3	3.8	2.7	5.9	5.1	12.0	9.0
27	2.1	0.0	3.8	3.0	6.0	5.2	12.1	8.5
28	2.6	0.5	2.8	2.6	6.1	4.6	11.1	8.1
29	2.3	0.6			6.0	4.8	12.1	8.5
30	2.5	0.3			5.8	5.0	11.4	9.4
31	2.7	0.6			6.7	5.0		
Mean	2.61	0.63	2.26	1.53	4.67	3.80	8.55	6.43
°C	1.6		1.9		4.2		7.5	
°F	34.9		35.4		39.6		45.5	

* Narragansett Marine Laboratory Pier.

Table 9 (cont'd)

Kingston, R. I.* 41°29' 32"N. 71°25' 10"W

Surface Water Temperature °C.

1957

Month / Day	May		June		July		August	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	10.6	8.2	15.6	12.6	21.5	19.1	23.4	21.3
2	-	-	15.9	13.0	21.5	18.4	23.3	21.5
3	-	-	16.8	13.7	21.5	18.4	23.2	21.6
4	10.9	9.1	16.0	14.0	21.6	18.5	22.4	21.5
5	10.7	9.0	16.5	14.6	21.5	18.5	23.8	22.1
6	10.4	8.5	17.3	14.4	21.2	17.2	23.9	21.0
7	11.1	9.0	16.6	14.9	21.6	17.9	-	-
8	11.8	9.0	17.6	14.2	22.3	18.1	-	-
9	12.2	9.1	17.5	14.6	21.4	18.5	-	-
10	12.4	9.1	17.6	14.9	21.7	18.6	21.5	19.9
11	11.8	9.8	18.1	14.4	22.0	18.6	22.4	19.5
12	12.4	10.1	16.9	14.4	22.0	18.1	21.7	19.9
13	13.4	10.1	18.1	14.7	21.3	18.6	21.5	19.1
14	13.6	10.6	18.9	15.2	22.6	18.6	20.6	19.1
15	12.3	9.0	18.9	15.7	22.2	19.5	20.1	18.7
16	14.3	10.4	20.5	16.6	22.5	19.4	21.2	18.7
17	14.1	11.2	22.5	17.6	23.0	20.4	20.2	19.0
18	13.6	10.4	21.8	13.1	23.6	20.5	20.1	19.1
19	13.5	11.6	20.0	14.4	22.5	20.6	20.0	19.2
20	13.4	12.4	21.9	13.4	22.5	20.0	20.0	18.8
21	13.1	12.4	21.9	18.2	23.1	20.7	20.5	19.0
22	12.8	10.9	21.4	18.1	23.2	19.8	20.6	19.1
23	13.5	11.6	20.0	16.7	23.5	19.1	20.5	19.0
24	14.1	12.2	20.4	17.1	23.4	21.7	20.6	19.0
25	15.2	11.6	20.5	17.1	23.7	20.5	20.2	19.4
26	14.4	11.5	21.5	17.6	23.8	20.0	20.0	19.5
27	14.5	10.5	21.9	18.1	22.1	19.6	20.8	19.5
28	14.5	11.2	22.0	18.4	22.4	20.1	20.5	19.6
29	13.9	11.5	21.4	19.1	21.9	20.6	20.3	19.3
30	15.3	11.7	21.8	19.2	22.7	20.7	19.6	19.1
31	15.6	12.3			22.7	20.0	19.9	19.3
Mean	13.08	10.48	19.32	15.67	22.34	18.72	21.17	19.71
°C	11.78		17.5		20.53		20.44	
°F	53.2		63.5		68.9		68.8	

* Narragansett Marine Laboratory Pier.

Table 9 (cont'd)

Kingston, R. I.* 41°29' 32"N. 71°25' 10"W

Surface Water Temperature °C.

1957

Month / Day	September		October		November		December	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	20.2	19.0	16.6	15.2	10.9	10.4	8.1	7.3
2	20.0	19.4	16.6	16.2	10.5	10.4	7.5	7.0
3	19.7	19.3	16.5	15.6	10.7	10.5	7.1	6.4
4	20.0	19.4	15.9	15.0	11.3	10.6	6.4	4.1
5	20.3	19.5	15.5	15.0	11.4	10.5	3.6	3.2
6	-	-	15.2	14.9	11.1	10.4	4.5	3.1
7	-	-	15.0	14.9	-	-	5.5	3.6
8	-	-	14.8	14.6	-	-	6.0	5.0
9	-	-	15.4	14.5	11.7	10.9	5.6	4.8
10	-	-	16.0	15.0	11.4	10.4	5.3	4.5
11	-	-	14.9	14.4	10.4	9.4	6.0	4.5
12	20.7	19.2	14.5	13.6	10.0	8.9	6.1	4.5
13	21.0	19.3	14.4	13.4	10.0	8.9	5.3	3.9
14	20.4	19.1	14.4	13.5	10.0	9.6	5.0	3.9
15	20.4	19.5	14.6	14.0	-	-	4.9	4.0
16	20.3	19.3	14.4	14.0	11.0	10.5	4.9	3.8
17	20.2	19.4	14.5	14.0	11.2	10.5	4.4	3.2
18	20.5	19.4	14.5	14.2	10.4	9.8	3.7	3.2
19	20.7	19.6	14.6	14.0	10.9	9.9	4.7	3.2
20	20.2	19.4	14.0	13.3	10.7	10.4	4.8	4.1
21	20.0	19.2	13.4	12.8	-	-	-	-
22	20.2	19.1	13.4	13.0	9.8	9.2	5.4	5.0
23	19.9	19.0	14.5	13.5	9.0	8.7	5.4	4.4
24	20.1	18.7	14.7	14.1	9.0	8.6	5.7	4.8
25	19.3	18.0	12.5	11.5	8.7	8.0	5.5	5.0
26	19.3	18.0	12.0	10.4	8.4	7.5	-	-
27	17.8	17.0	10.6	10.0	8.0	6.6	-	-
28	17.4	16.6	10.9	9.9	8.4	7.6	-	-
29	17.2	16.0	-	-	8.8	8.2	-	-
30	16.6	16.2	11.1	10.2	8.7	8.2	-	-
31			11.5	10.8			-	-
Mean	19.68	18.69	14.23	13.52	10.09	9.41	-	-
°C	19.19		13.87		9.75		-	
°F	66.5		56.9		49.6		-	

* Narragansett Marine Laboratory Pier.

Ambrose Lightship (Figure 10, Table 10)

Surface temperatures indicate near "normal" conditions for January and February, and early warming beginning in mid-March, with temperatures above the mean and above the 1956 readings. There was a sharp decline during the first 10 days of July, which was accompanied by an intrusion of relatively cold water at the bottom. Similar conditions were seen in 1956 from Five Fathom Bank as far south as Frying Pan Shoals. The intrusion was more pronounced and more extensive in 1957, but as Bumpus has indicated the phenomenon may well be a normal occurrence, produced to a greater or less extent each summer by a seasonal change in the wind system conducive to upwelling of sorts. (See Chesapeake Lightship below) After this intrusion temperatures recovered only to fall off again during August. The summer maximum was earlier and cooler than the mean and the 1956 record.

The winter minimum of less than 39°F extended to a depth of 50 feet; this was ca. 1 degree warmer than the 1956 minimum. The thermocline started to develop in mid-April with temperatures in the mid-40's and was broken down by the end of October.

It is probable that both maximum and minimum salinities were missed. The pattern, however, is quite similar to that seen in 1956 except that after the spring runoff there is less difference between surface and bottom values than appeared a year earlier.

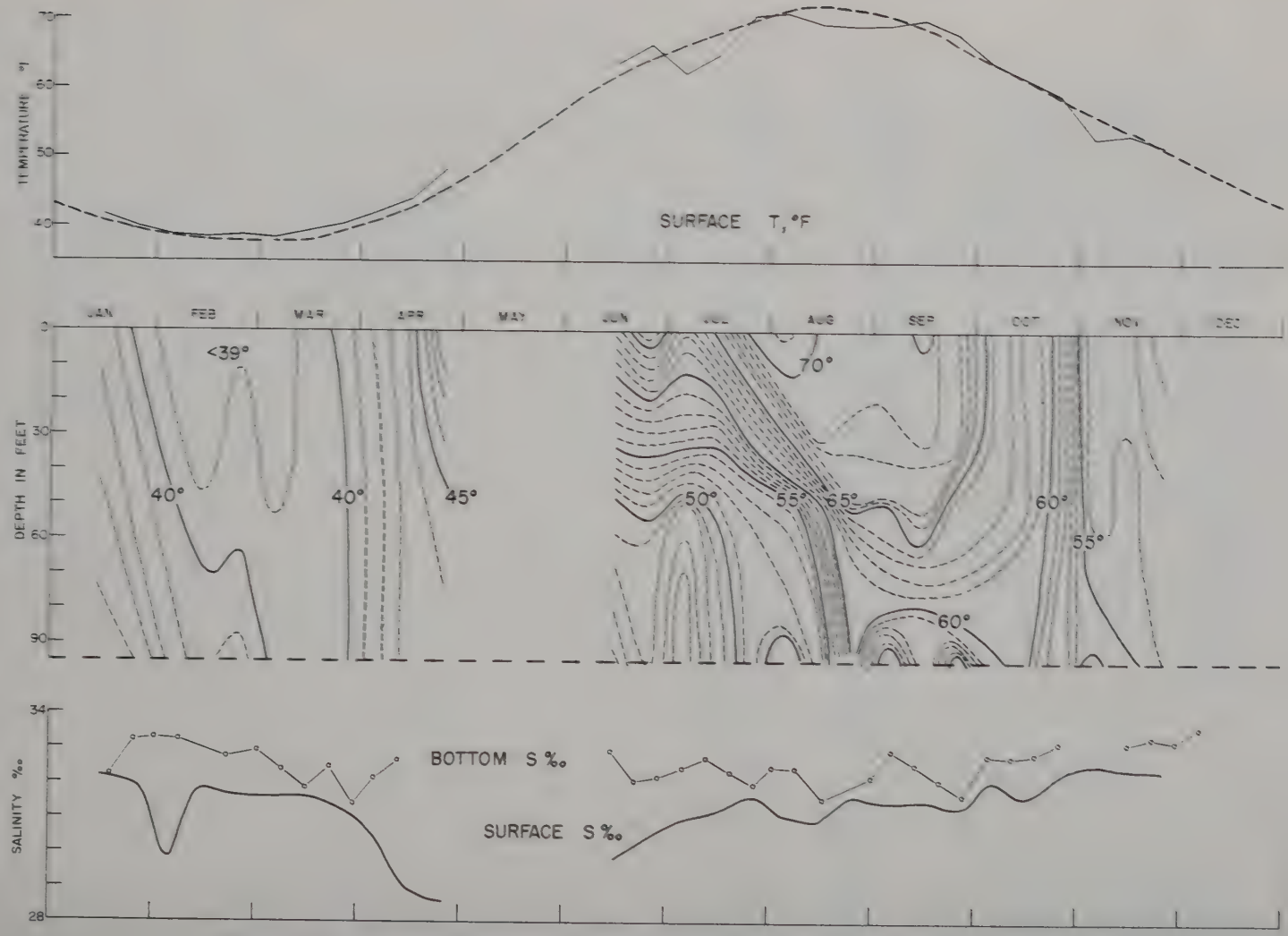

Figure 10. Ambrose Lightship, 1957. (Dashed line in upper diagram, mean for period 1937-1956)

Table 10

AMBROSE LIGHTSHIP 40°27.1'N. 73°49.4"W. Depth of water - 95 feet

1957

	January						February					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1							38.7	38.9	39.9	40.9	30.89	33.29
2							37.9	38.9	39.8	40.1	.88	-
3							38.2	38.7	39.2	-	.33	-
4							-	-	-	-	30.30	-
5							38.6	39.2	40.4	41.0	31.76	-
6							37.7	38.1	40.3	41.0	29.22	-
7							39.1	40.1	41.3	42.4	28.59	-
8							39.7	39.6	40.8	42.0	29.19	33.25
9							38.9	39.0	41.2	41.9	28.53	-
10							39.1	39.2	40.3	-	28.75	-
11							38.7	38.9	39.7	41.8	31.56	-
12							38.7	38.8	39.1	42.1	.78	-
13	41	-	-	-	30.72	-	-	37.9	39.4	41.6	31.96	-
14	42.6	43.6	44.2	47.8	32.06	-	38.8	38.9	39.2	41.7	32.48	-
15	43.1	43.1	43.4	45.8	.62	-	38.6	38.7	38.7	-	.66	-
16	42.1	42.7	42.6	44.4	32.64	-	-	37.2	37.7	37.9	.16	-
17	44.0	44.2	44.2	44.4	33.13	-	37.9	38.3	38.3	38.6	32.03	-
18	41.2	42.9	43.1	42.8	32.24	32.25	37.5	-	-	-	30.99	-
19	39.2	40.1	43.0	43.0	31.63	-	38.9	38.3	40.9	41.0	30.79	-
20	40.0	41.0	42.1	44.6	32.36	-	37.9	38.1	40.2	41.6	31.82	-
21	38.2	41.3	41.4	45.0	30.00	-	37.9	38.1	-	-	32.39	-
22	38.5	-	-	-	30.36	-	-	-	-	-	32.39	32.73
23	40.8	41.0	41.0	43.4	32.98	-	38.5	39.3	39.1	43.1	31.07	-
24	39.8	40.0	40.1	43.0	33.02	-	38.3	39.4	39.7	41.7	32.09	-
25	41.4	41.6	42.2	45.8	33.20	33.22	-	-	-	-	30.14	-
26	41	-	-	-	33.30	-	39.2	39.2	39.7	41.3	31.00	-
27	39.8	41.7	42.7	44.8	31.92	-	40.0	39.8	39.7	40.3	31.31	-
28	40.0	41.3	41.8	44.2	32.60	-	-	39.8	39.5	40.1	32.60	-
29	39.4	40.3	41.3	43.1	31.25	-						
30	40	-	-	-	32.20	-						
31	39.5	40.4	41.6	42.9	30.86	-						
Mean	-	-	-	-	-	-	38.6	38.8	39.7	41.1	31.06	33.09

Table 10 (cont'd)

AMBROSE LIGHTSHIP 40°27.1'N. 73°49.4'W. Depth of water - 95 feet

1957

Depth / Day	March Temperature °F 0'	30'	50'	95'	March Salinity °/oo 0'	95'	April Temperature °F 0'	30'	50'	95'	April Salinity °/oo 0'	95'
1	38.9	38.8	38.8	39.0	32.84	32.94	41.2	40.8	40.6	40.5	31.26	-
2	38.4	38.8	38.8	-	31.79	-	42.0	41.0	40.6	40.3	30.27	-
3	38.4	38.6	39.3	39.4	31.64	-	41.7	41.7	41.0	40.9	31.32	-
4	38.3	38.8	39.5	40.0	31.00	-	42.1	42.3	40.9	-	31.37	-
5	38.0	38.1	38.5	40.1	31.59	-	41.8	41.8	41.8	-	31.21	32.15
6	38.1	38.4	39.0	40.2	29.07	-	42.1	41.6	41.5	-	30.42	-
7	38.6	38.7	38.9	40.3	32.16	-	42.4	42.2	-	-	29.18	-
8	38.4	38.4	38.8	39.6	31.88	32.40	43.2	42.2	41.4	-	30.03	-
9	38.7	38.7	39.0	39.8	32.32	-	42.2	42.4	42.4	-	31.10	-
10	38.3	38.3	38.3	39.0	31.74	-	42.5	42.5	42.0	41.8	28.75	-
11	38.3	38.3	38.7	39.5	31.63	-	42.6	42.3	42.2	42.2	28.53	-
12	39.0	39.4	40.4	40.9	31.83	-	43.1	43.0	43.0	-	26.11	32.68
13	39.2	39.2	40.0	40.6	30.31	-	43.0	43.0	43.0	43.1	30.83	-
14	39.4	39.3	39.6	-	31.05	-	43.0	43.1	43.5	43.8	30.88	-
15	39.9	39.1	39.8	40.0	30.93	31.84	43.3	43.3	43.8	-	29.13	-
16	39.9	39.1	38.9	39.0	31.86	-	43.9	43.6	43.9	44.2	28.81	-
17	40.3	39.0	39.3	39.4	31.94	-	44.5	44.2	43.9	44.4	29.82	-
18	40.2	39.9	39.0	39.0	31.70	-	44.9	44.2	44.1	44.1	28.16	-
19	39.0	39.7	39.4	39.0	32.48	-	45.5	44.0	44.3	44.2	-	-
20	39.3	39.3	39.3	39.3	32.48	-	45.7	44.2	44.2	44.2	28.18	-
21	39.0	38.9	38.9	39.1	32.52	-	46.0	43.5	43.3	43.3	28.29	-
22	39.6	39.0	39.0	39.1	30.00	32.49	48.2	47.4	44.2	44.1	29.52	-
23	40.6	40.3	39.9	39.4	29.68	-	49.0	44.9	44.0	44.0	28.66	-
24	40.8	39.4	39.2	39.9	28.04	-	-	47.3	44.1	44.0	25.50	-
25	40.3	39.6	39.6	40.0	32.38	-	48.5	48.0	44.2	43.7	28.77	-
26	40.3	39.9	39.6	40.1	31.84	-	49.6	44.5	44.3	44.1	-	-
27	40.2	40.2	39.7	40.0	31.49	-	48.7	47.1	46.0	-	31.07	-
28	40.5	39.8	39.8	40.1	30.99	-	-	-	-	-	-	-
29	40.3	40.3	40.4	40.4	32.71	31.40	-	-	-	-	-	-
30	40.6	40.3	40.2	40.2	32.04	-	-	-	-	-	-	-
31	40.7	40.7	40.5	40.5	32.26	-						
Mean	39.4	39.2	39.4	39.8	31.49	32.21	44.3	43.6	43.0	43.2	29.49	30.70

Table 10 (cont'd)

AMBROSE LIGHTSHIP 40°27.1'N. 73°49.4'W. Depth of water - 95 feet

1957

	May						June					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1												
2												
3												
4												
5												
6												
7												
8							61.0	59.4	52.8	-	30.61	-
9							61.3	57.4	51.8	-	30.62	-
10							62.0	56.0	51.8	48.0	28.96	-
11							61.6	59.3	52.3	47.0	29.76	-
12							61.6	58.8	49.0	45.8	30.01	-
13							60.6	-	-	-	30.03	-
14							60.0	56.3	48.7	43.8	29.85	32.92
15							-	53.2	46.0	44.5	29.78	-
16							-	53.0	49.4	45.4	30.17	-
17							65.0	54.8	48.0	46.0	31.49	-
18							65.0	55.0	49.7	46.5	29.40	-
19							67.6	57.2	52.3	-	28.24	-
20							67.1	59.0	49.8	48.0	29.90	-
21							69.0	56.0	49.7	-	29.79	32.05
22							68.0	61.4	52.1	48.2	28.26	-
23							70.4	60.0	51.9	50.2	30.51	-
24							68.4	60.5	52.3	50.0	31.63	-
25							67.5	58.0	50.8	45.7	.09	-
26							66.0	53.7	50.3	45.8	31.54	-
27							63.5	54.6	51.0	46.8	30.30	-
28							66.4	52.2	50.9	48.9	.82	32.20
29							62.0	53.0	51.6	50.2	.39	-
30							62.5	57.3	49.4	47.0	30.43	-
31												

Table 10 (cont'd)

AMBROSE LIGHTSHIP 40°27.1'N. 73°49.4'W. Depth of water - 95 feet

1957

Day	July Temperature °F 0'	30'	50'	95'	July Salinity °/oo 0'	95'	August Temperature °F 0'	30'	50'	95'	August Salinity °/oo 0'	95'
1	61.9	61.5	49.3	46.1	30.72	-	-	-	-	-	30.77	-
2	61.1	57.2	45.7	45.2	.75	-	73.4	64.5	52.6	47.0	31.72	32.49
3	60.3	60.2	45.3	45.0	.19	-	72.9	64.0	53.1	-	31.56	-
4	63.6	63.1	47.7	-	30.55	-	71.5	63.0	54.7	49.5	30.98	-
5	64.2	55.2	49.0	-	32.72	32.46	72.2	59.5	50.8	48.0	31.46	-
6	63.5	51.5	46.8	45.9	30.61	-	70.6	70.0	50.5	47.8	31.66	-
7	60.3	55.0	47.3	45.3	.76	-	69.1	70.7	53.9	-	30.34	-
8	64.2	53.4	47.2	46.0	30.46	-	70.1	66.2	54.9	50.8	.72	-
9	61.6	55.4	50.1	47.2	32.16	-	69.8	65.0	-	50.2	.41	32.44
10	63.1	55.0	49.6	46.3	30.58	-	70.2	63.0	54.0	51.0	.44	-
11	65.1	59.0	49.5	46.2	30.83	-	69.8	65.0	53.8	52.0	.67	-
12	61.7	54.9	48.6	46.8	32.36	32.71	69.0	68.9	58.5	52.3	30.90	-
13	64.7	55.0	49.7	48.0	30.44	-	70.0	69.8	57.7	50.8	31.07	-
14	61.4	53.3	49.7	48.2	.52	-	69.0	70.4	56.7	51.3	30.44	-
15	62.8	53.0	50.5	50.2	.76	-	69.8	69.2	65.5	51.9	31.81	-
16	64.7	58.0	51.7	-	30.89	-	70.0	69.8	61.0	51.0	.50	31.54
17	-	-	-	-	31.21	-	69.9	70.1	59.5	51.1	31.26	-
18	66.3	56.2	51.2	-	.03	-	69.1	69.9	60.8	53.0	30.14	-
19	69.9	56.3	51.8	50.0	.87	32.33	69.2	67.8	59.0	53.3	30.53	-
20	69.7	58.0	51.5	50.0	.92	-	70.1	69.9	62.0	54.0	31.28	-
21	70.3	53.7	51.0	-	.59	-	70.0	69.8	60.0	53.2	.03	-
22	70.8	53.1	50.9	-	.30	-	70.5	70.2	70.0	56.0	.72	-
23	71.7	51.1	50.7	-	.82	-	70.0	69.9	69.5	61.5	.68	-
24	70.3	56.8	52.0	-	.85	-	69.2	68.3	67.3	-	.82	-
25	70.3	65.0	54.2	52.0	.91	-	69.9	68.8	67.5	59.7	.53	-
26	70.9	67.2	54.7	51.5	.97	31.99	68.9	67.3	67.2	61.6	.84	-
27	68.9	54.7	53.3	50.8	.37	-	68.6	68.2	67.8	63.1	31.88	-
28	71.3	67.0	54.1	51.8	.93	-	68.5	68.4	68.2	60.6	32.24	-
29	72.0	69.4	55.0	53.8	.92	-	68.0	68.2	68.2	60.9	32.13	-
30	71.2	69.2	54.2	51.5	31.42	-	-	68.6	68.4	63.3	30.96	32.19
31	70.0	69.0	52.0	49.5	30.82	-	69.8	68.9	68.7	64.0	31.21	-
Mean	66.3	58.2	50.5	48.5	31.27	32.37	70.0	67.8	60.8	54.4	31.22	32.16

Table 10 (cont'd)

AMBROSE LIGHTSHIP 40°27.1'N. 73°49.4'W. Depth of water - 95 feet

1957

Depth / Day	September Temperature °F 0'	30'	50'	95'	September Salinity °/oo 0'	95'	October Temperature °F 0'	30'	50'	95'	October Salinity °/oo 0'	95'
1	69.9	68.5	68.5	63.9	31.86	-	-	-	-	-	32.28	-
2	69.8	68.4	68.2	-	30.90	-	64.9	-	-	-	31.86	-
3	70.0	68.3	67.7	63.0	31.00	-	65.1	65.1	65.0	-	32.13	-
4	69.9	68.5	67.3	-	30.89	-	65.6	65.6	65.2	51.4	32.36	32.82
5	69.9	69.0	62.0	50.5	31.23	-	64.6	64.9	64.7	53.0	-	-
6	69.0	69.2	63.5	49.9	.34	32.97	63.9	63.8	63.9	61.0	32.11	-
7	69.0	68.9	55.0	49.0	.34	-	63.0	63.0	63.0	63.0	.20	-
8	68.7	68.6	64.0	49.3	.95	-	63.1	63.1	62.8	62.0	.25	-
9	69.3	69.0	65.6	49.9	31.99	-	63.1	63.0	62.2	61.9	32.10	-
10	69.0	69.0	68.7	-	32.16	-	62.9	63.6	63.0	62.6	31.31	-
11	68.8	68.4	68.5	58.0	.15	-	63.0	63.1	63.1	62.4	32.43	32.78
12	70.0	69.3	69.0	60.0	32.10	-	62.7	62.8	62.7	61.8	32.55	-
13	70.0	69.5	69.0	59.7	30.89	32.53	61.5	62.2	62.6	60.5	31.88	-
14	70.5	69.0	66.3	57.8	31.57	-	61.7	61.8	61.9	-	32.21	-
15	70.8	69.2	65.8	56.9	.79	-	61.0	61.8	62.2	-	31.48	-
16	70.7	69.9	67.8	59.8	31.12	-	61.2	61.1	62.2	58.8	31.00	-
17	70.6	69.2	62.5	57.7	30.90	-	61.2	62.2	62.9	58.9	30.80	-
18	70.2	70.1	67.8	-	31.64	-	61.1	61.9	62.1	59.2	30.38	32.86
19	70.0	70.0	69.8	58.1	.63	-	62.0	62.5	62.8	61.1	31.48	-
20	69.0	69.0	67.8	-	31.23	32.09	61.1	61.0	61.0	58.9	31.95	-
21	70.2	70.2	69.5	-	30.67	-	60.9	60.9	60.9	56.1	32.27	-
22	70.7	70.5	65.5	55.5	30.78	-	59.9	61.0	61.1	56.5	31.61	-
23	70.0	70.1	65.2	56.0	31.15	-	59.7	60.7	60.8	57.1	.26	-
24	68.4	68.4	61.4	51.4	.51	-	60.3	60.5	61.3	57.9	31.99	-
25	67.5	67.1	59.5	53.0	31.36	-	61.1	61.1	61.1	57.2	32.57	33.20
26	67.9	68.0	64.0	57.1	30.86	-	60.5	60.2	60.1	55.9	.87	-
27	67.6	67.8	60.5	53.5	31.63	31.67	59.7	59.5	59.5	57.2	.69	-
28	67.5	67.5	62.0	52.5	32.00	-	58.6	58.5	58.4	58.1	.56	-
29	64.9	67.2	66.2	54.6	30.90	-	56.8	57.2	57.6	57.0	.12	-
30	66.0	66.9	65.5	55.0	31.93	-	57.2	57.5	57.8	57.8	.38	-
31							57.9	57.5	58.0	59.2	32.33	-
Mean	69.2	68.8	65.5	55.5	31.42	32.32	61.5	61.6	61.7	58.7	31.98	32.92

Table 10 (cont'd)

AMBROSE LIGHTSHIP 40°27.1'N. 73°49.4"W Depth of water - 95 feet

1957

	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	52.1	52.1	52.2	53.2	32.51	-	50.7	50.8	50.8	52.0	32.89	-
2	52.1	52.1	52.1	52.2	.85	-	50.9	50.9	50.9	51.1	33.25	-
3	52.1	52.1	52.2	52.7	.66	-	49.4	50.1	50.3	51.8	32.87	-
4	52.1	52.1	52.1	52.8	.75	-	50.8	50.8	50.8	50.7	33.40	-
5	51.9	51.9	51.9	52.7	.78	-	51.8	51.8	51.7	51.7	.83	-
6	51.9	51.9	52.1	52.9	.71	-	50.2	50.2	50.2	50.2	33.59	33.61
7	51.2	52.0	52.2	54.0	32.18	-	48.0	49.5	50.0	50.0	32.63	-
8	56.2	56.2	57.2	57.8	31.12	-						-
9	56.2	56.2	56.2	58.0	32.71	-						-
10	56.8	56.8	56.8	56.8	33.15	-						-
11	54.2	54.2	54.2	55.2	33.08	-						-
12	54.8	54.2	54.7	54.2	32.82	-						-
13	52.1	54.7	54.2	55.7	.10	-						-
14	54.0	54.2	55.2	55.7	.22	-						-
15	54.8	54.2	54.2	55.6	.08	33.17						-
16	54.4	54.2	54.2	55.0	32.51	-						-
17	54.6	54.6	54.2	55.1	31.91	-						-
18	54.1	54.2	54.2	54.2	32.30	-						-
19	54.0	54.2	54.4	55.0	.71	-						-
20	54.1	54.0	54.7	55.5	32.20	-						-
21	52.7	52.2	54.2	55.2	31.75	-						-
22	52.5	54.1	54.2	55.1	32.26	33.37						-
23	54.2	54.2	54.1	54.1	.17	-						-
24	52.2	52.2	54.5	54.6	.73	-						-
25	52.1	52.2	54.2	53.8	32.98	-						-
26	54.1	54.1	54.1	53.1	31.40	-						-
27	54.2	54.2	54.2	54.2	33.53	-						-
28	50.0	54.6	54.1	54.6	31.21	-						-
29	50.6	52.2	54.2	54.1	31.33	33.23						-
30	50.0	50.2	52.6	53.1	32.48	-						-
31												-
Mean	52.9	53.4	54.2	54.5	32.45	33.26	-	-	-	-	-	-

Barnegat Lightship (Figure 11, Table 11)

The 1957 record here was plagued by instrument failure. What data there are indicate little departure from the mean from February through May, though temperatures were well above the 1956 values for this period. The last half of June was well above the mean, but was followed by a sharp drop during the first 10 days in July. (Boston, Buzzards, Ambrose and Five Fathom Bank Lightships show similar drops in surface temperatures at this time.) The leveling off of the summer peak is to be seen at other stations. The maximum of 71.6°F was in mid-August. An intrusion of relatively cold bottom water appeared in July and early August, but rapidly disappeared toward the end of August.

Surface salinities ranged from a low of 31.38 °/oo in early May to a high of 33.04 in January. These values were generally higher than those of 1956.

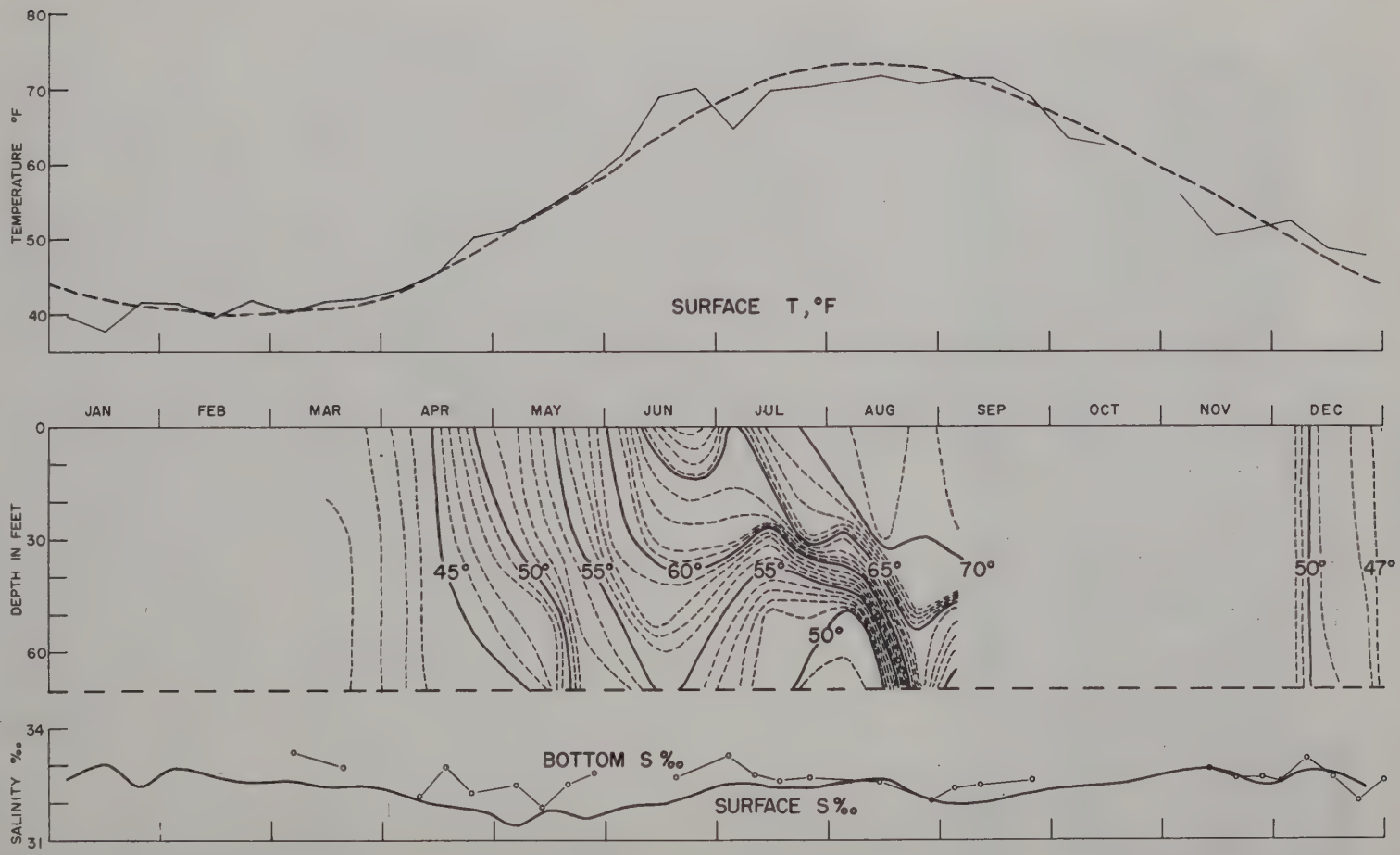

Figure 11. Barnegat Lightship, 1957. (Dashed line in upper diagram, mean for period 1947-1956)

Table 11

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W Depth of water - 72 feet

1957

	January *						February					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	40				32.41	-						-
2						-						-
3					-	-						-
4					-	-	40				32.66	-
5	40				31.86	-	42				33.02	-
6	42				32.64	-	40					-
7	40				33.23	-	42					33.30
8	37				33.56	-	43				33.24	-
9	39				32.37	-						-
10	40				32.38	-						-
11	42				33.20	-	41				33.18	-
12	40				32.72	-						-
13	40				32.28	-	39				32.90	-
14	38				33.30	-	40				32.91	-
15					-	-	41				32.89	-
16	38				33.47	-	40				32.68	-
17	38				33.04	-	39					-
18	34				33.04	-	40				31.99	-
19	36				-	-	37				32.40	-
20	35				33.24	-	40				32.64	-
21	42				-	-						-
22	41				32.58	-						-
23					-	-	40					-
24	42				31.54	-	44				32.62	-
25	43				32.03	-	43					-
26	41				33.11	-	42				32.56	-
27	42				31.41	-	40				32.35	-
28	40				33.14	-						-
29	42				-	-						
30					-	-						
31	41				33.14	-						
Mean	39.7	-	-	-	32.71		40.7				32.72	-

* 1 Jan-12 March Surface temperature read from bucket thermometer.

Table 11 (cont'd)

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W Depth of water - 72 feet

1957

	March						April					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	-				-	-	-	-	-	-	-	-
2	40				32.32	-	42.8	42.0	41.9	42.0	31.96	-
3	40				32.16	-	43.6	43.0	42.9	42.6	-	-
4	40				32.63	-	-				-	-
5	40				32.74	-	43.0	43.0	43.0	43.0	32.65	-
6	40				-	33.30	43.0	43.0	43.2	43.0	32.24	-
7	42				32.96	-	43.6	43.1	42.9	43.1	31.90	-
8	-				-	-	-	-	-	-	-	-
9	40				32.91	-	-	-	-	-	-	-
10	40				32.30	-	-	-	-	-	-	32.13
11	40				33.05	-	47.7	46.9	46.7	46.8	31.72	-
12	42				32.65	-	-	-	-	-	.56	-
13	40.3	40.0	39.5	39.5	32.24	-	44.0	43.9	43.8	43.3	.93	-
14	40.8	40.0	39.4	39.7	31.50	-	-	-	-	-	.98	-
15	40.9	40.3	39.9	39.9	31.89	-	44.9	44.0	43.9	43.5	.92	-
16	44				32.08	-	-	-	-	-	31.88	-
17	-	-	-	-	-		45.0	45.0	44.8	44.2	-	32.96
18	43.0	41.7	41.0	41.0	33.10	-	-	-	-	-	32.22	-
19	42.5	42.1	41.0	41.0	32.87	-	-	-	-	-	-	-
20	41	-	-	-	-	32.94	-	-	-	-	32.13	-
21	41.8	41.7	41.2	41.0	32.81	-	49.9	48.8	46.6	46.2	31.08	-
22	40.1	40.0	40.2	40.4	32.96	-	47.5	-	-	-	32.13	-
23	40.7	40.4	40.6	40.9	32.87	-	48.0	47.7	44.9	44.9	32.12	-
24	41.9	41.1	41.1	41.2	32.70	-	50.3	46.5	44.6	44.6	-	32.25
25	41.7	41.4	41.2	41.2	32.94	-	49.2	48.6	46.2	45.0	32.13	-
26	-	-	-	-	-	-	-	49.0	47.0	44.7	32.12	-
27	-	-	-	-	-	-	50.1	46.1	44.2	44.2	31.32	-
28	43.2	41.7	41.9	42.0	31.62	-	51.1	45.4	44.4	44.2	.97	-
29	42.4	41.6	41.9	42.0	31.26	-	52.3	48.1	44.1	44.1	.68	-
30	43				31.81	-	51.8	48.0	43.9	43.9	31.74	-
31	42.7	42.3	42.1	41.8	32.85	-						
Mean	41.3	-	-	-	32.47	-	47.1	45.7	44.4	44.1	31.92	32.45

Table 11 (cont'd)

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W Depth of water - 72 feet

1957

	May						June					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	52.1	49.3	44.1	43.9	31.85	-	61.7	59.9	56.0	52.6	32.26	-
2	51.7	51.2	46.3	44.5	30.87	-	62.7	61.0	55.4	53.2	31.88	-
3	51.0	51.0	51.0	-	30.86	-	62.4	62.0	54.0	53.2	.62	-
4	49.3	49.2	45.3	44.9	31.36	-	60.2	59.5	56.0	53.2	.64	-
5	48.7	48.4	44.8	44.5	.89	-	62.8	60.9	54.2	53.1	.99	-
6	49.9	48.8	44.7	44.2	.81	32.43	59.3	59.2	53.5	52.8	.57	-
7	50.7	49.5	48.2	44.6	.52	-	57.3	54.8	54.0	47.1	31.85	-
8	53.4	49.8	49.7	-	.19	-	-	-	-	-	-	-
9	52.7	50.5	48.4	45.0	.04	-	-	-	-	-	32.19	-
10	51.8	51.2	46.8	44.9	.44	-	63.0	61.2	59.8	54.7	31.69	-
11	52.8	52.4	45.3	45.1	.54	-	64.8	62.0	55.0	53.2	31.23	-
12	51.8	51.2	45.5	45.5	.90	-	-	-	-	-	-	-
13	52.9	50.5	45.7	45.5	31.83	31.84	-	-	-	-	32.16	-
14	53.8	49.7	46.6	45.4	32.02	-	65.5	62.0	55.3	54.9	.02	-
15	55.7	50.6	46.1	45.1	31.69	-	67.6	63.8	61.0	55.9	.03	-
16	55.2	53.7	46.6	45.5	31.92	-	69.5	63.0	61.1	56.1	32.01	-
17	54.4	53.3	48.1	46.8	32.04	-	70.8	63.6	60.1	55.9	31.97	-
18	55.7	55.0	48.7	46.2	31.57	-	72.7	62.7	60.2	55.8	32.04	-
19	55.8	55.7	48.0	46.1	31.61	-	71.0	62.7	60.3	56.5	-	32.62
20	54.5	54.5	54.0	48.6	32.26	32.48	69.0	62.0	57.8	56.2	32.08	-
21	53.4	53.4	53.4	53.4	32.30	-	71.4	64.0	59.3	55.4	.07	-
22	53.8	53.8	53.4	53.6	31.80	-	71.3	61.6	57.7	55.6	.10	-
23	55.4	54.2	53.8	53.9	.16	-	71.2	62.3	59.9	56.3	.09	-
24	56.2	52.7	52.7	53.0	.09	-	70.0	62.5	55.8	54.9	.22	-
25	57.2	53.2	53.2	52.9	-	-	69.7	62.7	56.6	54.1	32.28	-
26	58.6	53.7	53.8	51.3	.31	-	-	-	-	-	-	-
27	59.1	57.7	54.3	51.2	.32	32.74	71.5	61.3	55.9	53.5	32.20	-
28	58.8	56.0	54.4	51.1	.48	-	71.0	62.4	55.7	52.4	32.32	-
29	-	-	-	-	.63	-	-	-	-	-	-	-
30	59.8	59.8	-	-	.77	-	63.7	62.4	54.8	52.7	32.60	-
31	60.4	59.0	54.7	52.0	31.92	-						
Mean	54.2	52.6	49.2	47.7	31.60	32.37	66.7	61.6	57.1	54.1	32.00	-

Table 11 (cont'd)

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W Depth of water - 72 feet

1957

	July						August					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	63.9	62.9	52.9	51.4	32.48	-	71.2	63.0	51.5	48.1	32.55	-
2	65.5	63.7	-	-	32.57	-	67.5	52.5	48.6	48.3	.62	-
3	67.5	64.5	53.6	51.8	-	33.21	69.0	49.5	48.8	48.6	.27	-
4	63.0	62.3	53.9	53.6	32.58	-	67.8	53.0	48.5	48.3	.21	-
5	63.3	63.1	55.2	53.1	.57	-	70.7	60.0	48.4	47.7	.44	-
6	63.6	62.9	53.0	53.0	.40	-	72.1	68.3	49.6	49.1	32.58	-
7	-	63.3	55.2	-	.48	-	72.0	70.8	52.2	48.4	-	32.57
8	-	-	-	-	.40	-	72.8	71.6	50.7	48.8	32.69	-
9	65.7	-	55.5	52.6	32.62	-	72.7	72.0	49.5	48.8	.62	-
10	65.0	58.2	54.0	52.0	-	32.73	73.0	71.0	50.4	49.2	.63	-
11	68.0	66.0	54.4	52.8	32.66	-	72.3	71.8	51.5	49.1	.69	-
12	-	59.0	52.9	52.8	.55	-	72.6	72.3	50.5	48.4	.51	-
13	-	55.8	53.7	51.0	.53	-	71.1	70.9	69.6	52.4	32.36	-
14	-	56.0	50.5	-	.18	-	70.8	70.2	66.8	50.0	-	32.51
15	70.0	52.5	50.8	50.8	.26	-	71.0	70.8	67.0	48.8	32.31	-
16	69.1	52.8	50.2	49.8	32.28	-	71.9	71.1	57.0	48.7	.37	-
17	68.3	59.5	48.4	48.1	-	32.57	71.5	71.1	59.0	49.2	.65	-
18	69.2	55.5	48.6	48.1	32.31	-	72.0	71.2	50.2	49.5	.85	-
19	70.0	58.0	48.8	48.1	.22	-	71.9	71.2	53.0	49.7	.77	-
20	72.7	58.0	51.1	50.5	32.28	-	70.5	70.5	66.0	49.9	.74	-
21	-	-	50.6	49.5	-	-	70.9	70.5	63.0	49.7	32.61	-
22	-	-	48.8	48.4	32.49	-	-	-	-	-	-	-
23	66.5	63.7	47.7	47.5	32.46	-	70.4	70.2	70.2	60.5	-	-
24	-	-	-	-	-	-	70.6	69.9	69.5	62.0	32.19	-
25	69.9	67.1	58.0	49.5	-	32.62	70.1	69.9	69.9	62.0	.33	-
26	69.7	68.4	63.0	49.4	32.63	-	70.2	69.8	69.5	68.0	.16	-
27	72.0	68.8	50.5	49.1	-	-	71.7	70.6	70.1	68.7	32.08	-
28	71.8	69.6	48.8	48.2	31.92	-	70.4	70.2	70.1	69.8	-	32.02
29	72.2	69.6	49.1	48.4	32.06	-	70.1	70.0	70.0	69.8	32.02	-
30	70.2	65.1	49.1	48.1	32.52	-	71.0	69.6	69.4	67.1	31.95	-
31	68.4	64.0	47.9	47.9	-	-	71.1	69.8	69.4	68.5	31.67	-
Mean	68.1	61.9	52.0	50.2	32.41	32.78	71.0	68.1	59.3	54.2	32.42	32.37

Table 11 (cont'd)

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W Depth of water - 72 feet

1957

	September *						October					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	71.3	69.8	69.1	62.0	31.47	-	66				32.20	-
2	-	-	-	-	-	-	62				32.40	-
3	-	-	-	-	-	-	61				-	-
4	71.7	71.2	63.0	59.8	-	32.36	62				-	-
5	71.1	71.0	62.5	59.9	31.92	-	-				-	-
6	71.1	70.8	60.5	58.8	32.04	-	-				-	-
7	-	-	-	-	-	-	65				32.40	-
8	71.2	70.4	57.0	56.2	32.08	-	64.5				.40	-
9	72.0	71.5	71.0	58.7	32.10	-	61				.39	-
10	-	-	-	-	-	-	64				.38	-
11	72					32.44	64				.40	-
12	70				32.04	-	62				.37	-
13	72				.08	-	61				.38	-
14	73				.00	-	63				.38	-
15	71				.00	-	62				.46	-
16	71				32.04	-	62				.48	-
17	71				31.99	-	63				.46	-
18	71				32.04	-	63				.48	-
19	71				.00	-	62				32.41	-
20	71				.02	-	-				-	-
21	71				.10	-	-				32.34	-
22	72				.10	-	61				32.38	-
23	72				.16	-	62				-	-
24	-				32.28	-	-				-	-
25	66				-	32.59	-				-	-
26	70				32.41	-	-				-	-
27	68				.33	-	-				-	-
28	67				.31	-	-				-	-
29	67				.24	-	56				32.74	-
30	66				32.21	-	-				-	-
31							60				32.85	-
Mean	70.4	-	-	-	32.09	32.46	-	-	-	-	32.44	-

* 11 Sep.-29 Nov.: Surface temperatures read from bucket thermometer.

Table 11 (cont'd)

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W Depth of water - 72 feet

1957

	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	-				-	-	54.1	54.1	54.1	54.2	32.56	-
2	-				-	-	53.7	53.5	53.5	53.5	-	32.53
3	60				32.87	-	-	-	-	-	32.53	-
4	57				.84	-	-	-	-	-	-	-
5	57				32.82	-	-	-	-	-	-	-
6	-				-	-	53.1	53.1	53.2	53.2	33.50	-
7	57				32.85	-	51.1	51.2	51.2	51.3	32.83	-
8	53				.55	-	50.6	51.1	51.4	52.0	.48	-
9	53				.76	-	51.7	52.2	52.1	52.1	32.33	33.15
10	52				.89	-	51.8	51.9	51.9	51.9	33.22	-
11	51				.88	-	51.3	51.4	51.8	51.9	.08	-
12	50				.89	-	50.8	50.9	51.0	51.0	.30	-
13	52				.87	32.88	-	-	-	-	33.07	-
14	50				.94	-	48.8	48.8	48.8	48.8	32.94	-
15	50				.89	-	48.1	48.1	48.2	48.7	.74	-
16	50				.87	-	47.2	47.2	47.8	49.0	.60	32.66
17	50				.89	-	46.8	46.8	47.2	48.8	.37	-
18	50				.96	-	48.1	48.1	48.1	48.5	.87	-
19	50				.86	-	48.1	48.1	48.1	48.4	.89	-
20	51				.65	32.62	48.1	47.8	48.1	-	.10	-
21	53				.55	-	-	-	-	-	32.13	-
22	55				.28	-	46.9	47.9	48.1	49.0	31.92	-
23	54				.42	-	46.1	46.9	47.7	48.2	32.10	32.02
24	51				.41	-	47.0	47.1	48.6	48.1	.17	-
25	49				.53	-	-	-	-	-	.24	-
26	48				.53	-	-	-	-	-	.26	-
27	50				.64	32.63	48.6	48.3	48.5	48.6	.59	-
28	49				.66	-	48.1	47.9	48.5	48.9	.49	-
29	51				32.14	-	48.1	47.9	48.1	48.3	.52	-
30	-				-	-	48.0	48.0	48.1	48.1	.64	32.58
31							48.3	48.4	48.1	48.0	32.62	-
Mean	52.0	-	-	-	32.71	32.71	49.4	49.4	49.7	50.0	32.61	32.59

Five Fathom Bank Lightship (Figure 12, Table 12)

The warm conditions seen in December of the previous year (Bumpus, 1957) continued through January of 1957, and it was not until February that temperatures fell abruptly and become comparable to the mean. The minimum occurred in February with temperatures less than 41°F. Throughout the spring temperatures were consistently above those for 1956 and comparable to the mean till mid-May when they were higher. The summer maximum at the surface probably occurred at the end of July with readings greater than 74°F.

The bottom maximum which surely occurred at the time of the autumn overturn was missed. The intrusion of cold bottom water in late June and early July was accompanied by a drop in surface temperatures both here and at other stations.

During January, February, and December, salinities were somewhat below the 1956 readings; for the other months they were appreciably higher, showing little difference between surface and bottom values.

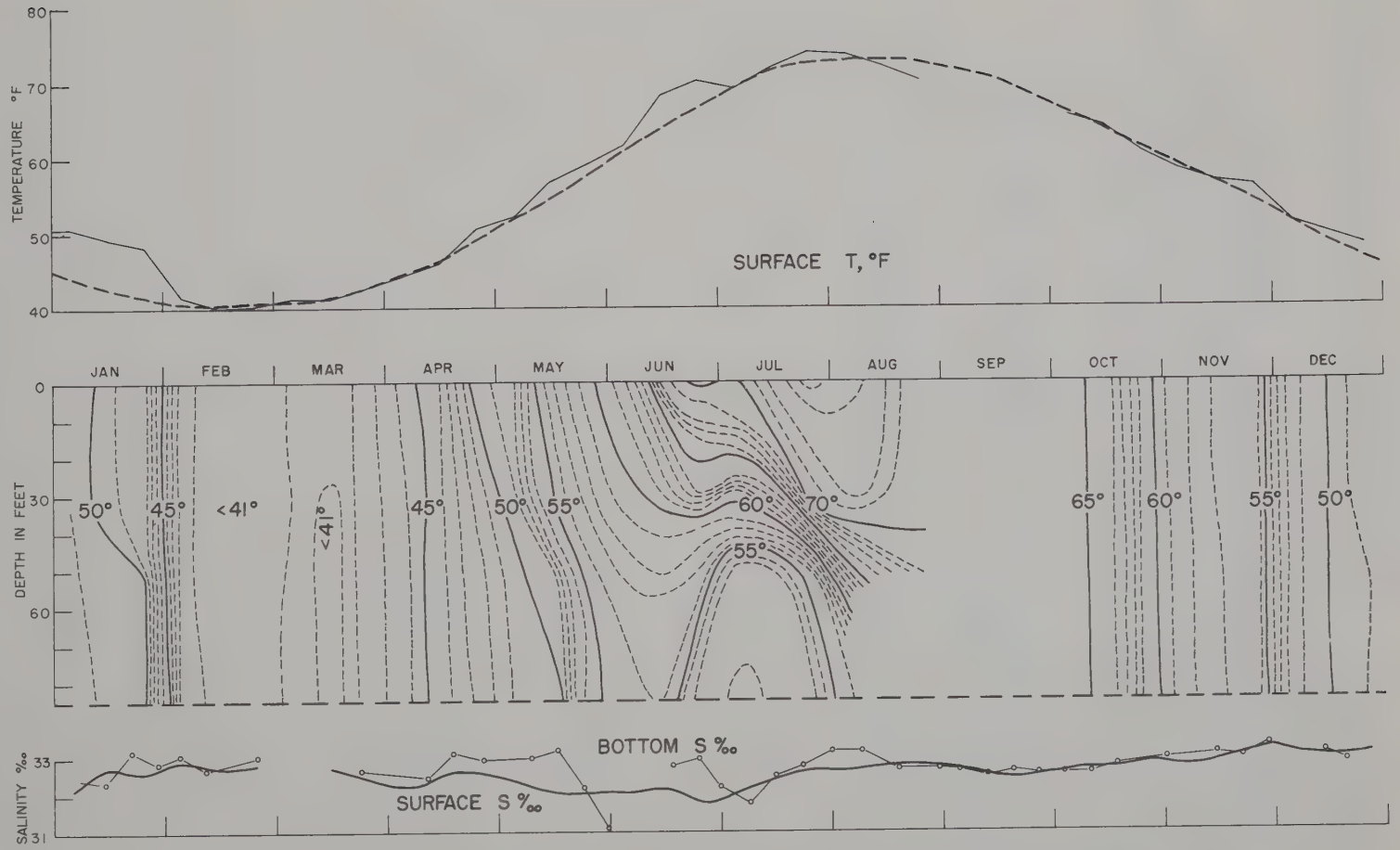

Figure 12. Five Fathom Bank Lightship, 1957. (Dashed line in upper diagram, mean for period 1947-1956)

Table 12

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1957

	January						February					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	85'	0'	85'	0'	30'	50'	85'	0'	85'
1	53.8	53.8	53.8	53.8	32.62	-	42.0	42.1	42.2	42.5	32.87	-
2	52.5	52.5	52.7	53.1	32.24	-	41.3	41.3	41.3	41.3	32.85	-
3	50.8	50.8	52.1	52.5	32.06	-	42.4	42.4	42.4	42.4	33.05	-
4	49.5	49.5	49.5	49.5	32.89	-	42.5	42.3	42.3	42.3	33.04	33.05
5	49.5	49.8	50.3	54.0	30.90	-	42.2	42.2	42.2	42.2	32.94	-
6	51.2	51.6	51.8	51.9	32.33	-	42.9	42.7	42.7	42.7	.93	-
7	51.3	51.3	51.3	51.4	32.44	32.44	42.3	42.1	42.1	42.1	.82	-
8	50.2	50.2	50.4	51.0	32.22	-	40.6	40.5	40.5	40.3	.81	-
9	49.2	49.4	51.0	51.5	31.82	-	42.0	42.0	42.0	41.5	.71	-
10	49.0	49.3	50.4	50.6	31.74	-	38.6	38.6	38.5	37.7	.71	-
11	49.5	49.5	49.6	49.8	32.42	-	42.0	42.0	42.0	41.9	.73	32.68
12	47.8	47.4	51.1	52.0	31.92	-	39.8	39.8	39.8	40.0	.51	-
13	49.3	51.3	52.3	52.9	32.22	-	39.6	39.5	39.5	40.0	.50	-
14	49.3	49.7	50.0	50.9	32.51	32.35	39.8	39.5	39.7	39.8	.44	-
15	-	-	-	-	33.11	-	39.6	39.6	39.6	39.8	.60	-
16	50.9	50.9	50.9	50.9	33.12	-	39.8	40.5	40.5	40.7	.65	-
17	49.2	49.2	49.2	49.2	32.78	-	40.0	40.0	40.0	41.2	32.65	-
18	48.3	48.3	48.3	48.3	32.87	-	40.0	40.0	40.0	41.1	33.03	-
19	49.4	49.4	49.4	49.4	33.28	-	40	-	-	-	33.21	-
20	49.9	49.9	49.9	50.1	33.33	-	40	-	-	-	32.89	-
21	-	-	-	-	31.55	33.19	40.0	40.0	40.0	40.0	.94	-
22	-	-	-	-	33.84	-	40.1	40.1	40.1	40.1	.90	-
23	47.3	47.5	50.3	50.9	32.46	-	40.5	40.0	40.1	40.1	.85	-
24	47.8	47.8	47.8	50.8	32.33	-	41.0	41.0	40.8	40.7	.56	-
25	48.2	48.2	48.3	48.8	32.50	-	40.9	40.5	40.5	40.6	.59	33.00
26	48.0	48.0	48.3	49.7	32.55	-	41.0	40.6	40.6	40.5	.58	-
27	48.1	48.1	49.1	50.3	32.54	-	39.0	39.0	39.0	39.2	.59	-
28	48.0	48.0	48.1	50.2	32.58	32.82	41.0	41.0	41.0	41.0	32.96	-
29	47.9	48.1	49.0	49.8	32.46	-						
30	50.2	50.1	50.1	50.2	32.95	-						
31	49.2	49.2	49.2	49.2	32.87	-						
Mean	49.5	49.6	50.5	50.8	32.50	32.70	40.7	40.7	40.7	40.8	32.78	32.91

Table 12 (cont'd)

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1957

Depth / Day	March* Temperature °F 0'	30'	50'	85'	March* Salinity °/oo 0'	85'	April* Temperature °F 0'	30'	50'	85'	April* Salinity °/oo 0'	85'
1	41.5	41.5	41.5	41.6	-	-	42.7	42.7	42.5	43.0	32.23	-
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	43.8	43.9	43.7	43.7	32.76	-
4	41.5	41.1	41.4	41.4	-	-	-	-	-	-	-	-
5	40.5	40.4	40.9	41.5	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	44.9	44.9	-	-	32.46	-
8	-	-	-	-	-	-	45.5	44.6	44.6	44.5	31.22	-
9	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	44.0	43.6	43.5	43.6	32.31	-
11	40.4	40.1	40.1	40.0	-	-	45.7	45.4	45.0	45.0	32.57	32.47
12	41.3	40.5	40.5	40.2	-	-	45.6	45.0	44.4	44.1	31.50	-
13	40.5	39.8	39.4	-	32.71	-	-	-	-	-	-	-
14	40.7	40.4	40.2	40.1	.69	-	-	-	-	-	-	-
15	41.4	40.9	40.4	-	.61	-	46.0	45.9	45.9	45.9	33.00	-
16	41.0	40.9	40.5	40.5	.69	-	46.3	46.2	46.0	46.0	32.94	-
17	43.3	42.1	41.8	41.2	.62	-	46.0	46.0	46.0	46.0	32.78	-
18	-	-	-	-	32.91	-	46.7	46.3	45.6	45.6	32.42	33.11
19	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	48.2	46.8	46.8	46.5	-	-
22	42.3	42.2	42.2	42.1	32.46	-	48.7	48.3	47.2	46.2	-	-
23	42.3	42.2	42.1	42.1	.48	32.66	-	-	-	-	-	-
24	43.3	42.8	42.4	42.1	.42	-	-	-	-	-	-	-
25	42.8	42.8	42.8	42.6	.55	-	-	-	-	-	-	-
26	42.5	42.7	42.6	42.6	.36	-	49.8	49.1	47.6	47.4	32.74	32.91
27	42.6	42.4	42.4	-	.29	-	-	-	-	-	-	-
28	42.6	42.4	42.1	42.1	32.22	-	53.0	49.6	48.1	47.9	32.50	-
29	-	-	-	-	-	-	54.4	47.5	47.5	47.4	32.53	-
30	-	-	-	-	-	-	50.2	48.8	47.7	47.7	-	-
31	-	-	-	-	-	-						
Mean	41.8	41.5	41.4	41.4	-	-	47.1	46.1	45.8	45.7	32.43	32.83

* - 1 Mar-13 June: Water in BT bellows - Temperature values scaled from length of traces.

Table 12 (cont'd)

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1957

Depth / Day	May* Temperature °F 0'	30'	50'	85'	Salinity °/oo 0'	85'	June* Temperature °F 0'	30'	50'	85'	Salinity °/oo 0'	85'
1	50.1	48.2	48.0	48.0	32.63	-	62.4	56.8	55.2	55.1	32.22	-
2	51.7	51.4	48.6	48.0	32.72	-	62.6	55.9	55.9	56.0	.13	-
3	-	-	-	-	-	-	61.0	60.9	54.3	54.1	.23	-
4	51.0	50.6	50.6	50.4	32.59	-	62.7	62.1	61.3	57.8	.02	-
5	51.3	50.8	50.6	50.4	.57	-	61.2	60.3	55.8	55.0	32.09	-
6	50.6	50.6	50.5	50.5	.37	-	61.7	61.2	58.4	55.2	31.92	-
7	51.2	49.9	48.3	48.4	32.41	-	62.3	60.0	57.1	53.1	31.66	-
8	-	-	-	-	-	-	-	-	-	-	-	-
9	54.7	53.7	50.1	48.9	32.08	32.98	-	-	-	-	32.12	-
10	55.3	53.0	50.1	48.1	31.47	-	61.3	61.3	61.2	61.0	.11	-
11	56.2	54.5	48.1	47.8	.48	-	-	-	-	-	.23	-
12	56.3	55.6	51.1	49.0	.81	-	65.1	63.1	61.6	61.1	.21	-
13	56.4	51.1	50.8	50.0	.77	-	-	-	-	-	32.20	-
14	57.0	54.9	50.8	50.2	31.93	-	-	-	-	-	-	-
15	57.2	56.0	51.0	50.1	32.05	-	66.5	61.8	58.0	55.0	32.14	-
16	58.6	56.9	50.8	49.2	31.89	33.18	-	-	-	-	.24	-
17	56.6	53.1	52.2	50.9	32.34	-	70.2	60.5	55.2	53.7	.15	32.77
18	56.6	54.4	51.5	50.6	.39	-	72.0	61.7	57.7	54.3	.11	-
19	57.2	57.1	53.0	50.9	32.44	-	-	-	-	-	.10	-
20	-	-	-	-	-	-	-	-	-	-	.13	-
21	55.2	55.1	55.0	54.9	32.28	-	67.5	60.7	59.7	54.8	.10	-
22	-	-	-	-	-	-					31.13	-
23	56.8	56.1	55.1	55.0	32.04	32.19	71.7	63.0	56.5	55.3	31.49	-
24	57.6	55.8	54.9	54.9	32.08	-	73.3	65.5	60.3	52.7	.24	32.94
25	58.2	56.8	55.8	55.5	33.00	-	72.3	69.0	56.5	50.6	.02	-
26	59.9	56.7	55.9	55.5	32.11	-	73.4	73.0	61.2	50.2	.37	-
27	60.0	58.0	55.4	54.9	31.33	-	-	-	-	-	31.52	-
28	60.6	59.8	55.9	-	.81	-	-	-	-	-	32.35	-
29	60.8	60.5	54.6	52.6	31.96	-	67.7	59.5	54.1	53.7	.24	-
30	61.8	60.8	54.8	53.9	32.04	31.07	67.7	59.5	50.9	50.8	32.27	-
31	61.1	60.7	57.7	54.8	32.20	-						
Mean	56.3	54.9	52.3	51.3	32.14	32.36	66.4	61.9	57.4	54.7	31.99	-

* 1 Mar-13 June: Water in BT bellows - Temperature values scaled from length of traces.

Table 12 (cont'd)

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1957

	July						August					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	85'	0'	85'	0'	30'	50'	85'	0'	85'
1	69.3	69.1	52.2	51.1	32.26	32.20	-	70.6	63.0	50.4	32.47	33.15
2	68.9	66.4	53.7	-	.29	-	75.2	74.1	67.9	66.8	.51	-
3	68.8	61.7	54.2	53.0	.21	-	-	-	-	-	.53	-
4	70.5	55.0	53.2	53.0	.19	-	-	-	-	-	.50	-
5	65.3	57.1	50.9	50.9	32.11	-	71.0	65.6	53.0	50.4	32.46	-
6	67.1	54.0	51.7	51.0	31.93	-	-	-	-	-	-	-
7	69.8	57.7	53.0	51.5	.84	-	-	-	-	-	32.73	-
8	71.0	59.0	52.3	51.6	.89	31.77	74.8	74.5	72.4	-	.77	33.15
9	71.4	61.0	52.5	52.2	.78	-	74.5	74.3	-	55.1	.73	-
10	72.0	60.0	52.3	52.2	31.92	-	73.9	73.6	68.0	56.8	.76	-
11	-	-	-	-	32.24	-	71.5	69.9	69.3	48.2	.80	-
12	-	-	-	-	-	-	73.5	71.9	69.3	57.2	32.89	-
13	72.3	56.0	53.0	52.7	32.26	-	-	-	-	-	-	-
14	72.2	53.5	52.0	51.9	.36	-	69.3	69.2	61.7	58.8	32.85	-
15	72.5	58.0	53.3	52.8	.48	32.49	-	-	-	-	.69	-
16	70.2	65.0	53.9	53.0	.24	-	73.0	72.9	-	-	.60	-
17	70.1	68.3	51.7	51.5	.46	-	74.0	-	-	-	.69	-
18	71.9	66.1	52.0	51.8	.49	-	-	-	-	-	32.68	32.67
19	74.5	71.2	52.7	52.3	.53	-	-	-	-	-	-	-
20	73.0	62.0	51.7	51.3	.46	-	-	-	-	-	-	-
21	73.5	70.8	51.3	50.8	.46	-	-	-	-	-	-	-
22	75.0	73.0	52.3	50.8	.66	32.74	73.5	73.3	72.9	-	32.92	-
23	75.0	70.2	50.4	49.9	.49	-	69.0	69.0	69.0	-	32.84	-
24	74.9	74.6	59.3	52.8	.58	-	69.2	68.9	68.8	68.7	-	-
25	72.5	72.0	61.8	55.7	32.81	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	71.1	68.9	68.7	32.76	-
27	-	-	-	-	-	-	-	69.8	68.9	68.8	32.73	-
28	-	-	-	-	-	-	-	-	-	-	-	-
29	73.9	70.0	55.7	55.3	-	-	69.7	69.1	69.1	-	32.73	32.69
30	74.6	-	-	-	32.67	-	70.1	69.3	69.3	69.3	32.76	-
31	74.0	-	-	-	32.51	-	-	-	-	-	-	-
Mean	71.7	63.8	53.2	52.1	32.31	32.30	72.1	71.0	67.4	59.9	32.70	32.92

Table 12 (cont'd)

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1957

	September						October					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	85'	0'	85'	0'	30'	50'	85'	0'	85'
1	-	-	-	-	-	-	66.1	66.1	-	-	32.56	-
2	71.6	70.1	69.9	-	32.73	-	-	-	-	-	-	-
3	71.0	67.8	67.3	-	.66	-	-	-	-	-	-	-
4	71.8	64.5	58.3	-	.51	-	66.0	66.0	65.9	-	32.64	-
5	-	-	-	-	.58	32.61	-	-	-	-	-	-
6					32.60	-	-	-	-	-	-	-
7					-	-	65.2	65.1	65.1	-	32.62	-
8					32.59	-	65.3	65.2	65.2	65.5	.64	-
9					.62	-	-	-	-	-	.62	-
10					.56	-	65.3	65.3	65.4	65.5	.60	32.57
11					.55	-	65.2	65.2	65.2	65.3	.64	-
12					.50	32.46	64.8	64.8	64.8	64.8	.61	-
13					.51	-	64.0	63.9	63.9	64.0	.64	-
14					.52	-	64.0	64.0	64.0	64.0	.66	-
15					.59	-	63.9	63.8	63.8	63.8	.64	-
16					32.24	-	63.9	63.9	63.9	63.9	.61	-
17					-	-	64.1	64.1	64.1	64.1	.65	32.78
18					-	-	64.1	64.1	64.0	63.9	32.63	-
19					32.49	32.61	-	-	-	-	-	-
20					.19	-	-	-	-	-	-	-
21					.53	-	62.2	62.1	62.1	62.1	32.74	-
22					.49	-	-	-	-	-	-	-
23					.49	-	62.6	62.5	62.5	62.4	32.87	-
24					.47	-	-	-	-	-	-	-
25					.38	-	-	-	-	-	-	-
26					.42	32.55	-	-	-	-	-	-
27					32.51	-	-	-	-	-	-	-
28					-	-	-	-	-	-	-	-
29					32.48	-	-	-	-	-	-	-
30	-	-	-	-	-	-	59.4	59.6	59.6	59.7	-	-
31							59.0	58.9	58.9	59.2	32.88	32.91
Mean					32.51	32.56	63.8	63.8	63.6	63.4	32.66	32.75

Table 12 (cont'd)

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1957

	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	85'	0'	85'	0'	30'	50'	85'	0'	85'
1	-	-	-	-	32.86	-	-	-	-	-	-	-
2	58.2	58.2	58.4	58.4	.66	-	53.1	53.1	53.1	53.1	33.30	-
3	59.2	59.2	59.2	59.2	.67	-	-	-	-	-	-	-
4	59.1	59.1	59.1	59.1	.62	-	52.1	51.9	51.9	51.9	32.94	-
5	58.8	58.8	58.8	58.8	.60	-	-	-	-	-	-	-
6	58.8	58.8	58.8	58.8	.61	-	50.2	50.2	50.2	50.2	33.14	-
7	58.2	58.1	58.1	-	.62	-	50.3	50.4	50.6	50.8	32.87	-
8	56.9	56.9	56.9	56.9	.74	-	51.6	51.7	51.8	51.8	33.04	-
9	-	-	-	-	.76	-	-	-	-	-	-	-
10	58.0	58.0	58.1	58.5	.90	-	-	-	-	-	-	-
11	57.1	57.1	57.1	57.1	.88	-	-	-	-	-	32.76	-
12	-	-	-	-	.86	-	-	-	-	-	32.76	-
13	56.7	57.0	57.0	57.1	.86	-	-	-	-	-	33.12	33.08
14	56.8	56.8	57.2	57.3	.87	33.05	-	-	-	-	33.28	-
15	57.0	57.2	57.2	57.2	.85	-	47.2	47.9	48.1	48.3	32.69	-
16	-	-	-	-	.66	-	47.3	47.4	47.4	47.4	32.89	-
17	-	-	-	-	32.79	-	48.2	48.3	48.3	-	33.24	-
18	56.2	56.4	56.9	57.1	33.02	-	46.6	46.9	46.9	-	32.78	-
19	57.1	57.1	57.1	57.1	33.00	-	47.4	47.4	47.4	-	32.81	32.83
20	57.0	57.0	-	-	32.96	-	48.7	48.9	48.9	48.9	33.19	-
21	56.9	56.9	56.9	56.9	32.98	32.97	-	-	-	-	32.89	-
22	57.0	57.0	57.1	57.4	33.02	-	48.4	48.8	49.9	-	33.09	-
23	56.6	56.8	56.8	56.9	.10	-	48.2	49.5	49.5	49.7	33.14	-
24	56.4	56.7	56.8	56.8	.13	-	48.1	49.9	50.6	-	32.80	-
25	56.4	56.8	56.9	56.9	.26	-	49.1	49.1	49.2	50.3	33.29	-
26	-	-	-	-	33.07	-	-	-	-	-	-	-
27	-	-	-	-	-	-	48.4	48.6	48.9	49.0	33.22	-
28	55.8	55.7	55.7	55.7	33.28	33.29	-	-	-	-	.08	-
29	55.8	56.1	56.1	56.1	.26	-	-	-	-	-	33.07	-
30	55.9	55.9	56.1	56.2	33.15	-	47.8	47.8	47.8	47.8	32.71	-
31							47.6	47.6	47.7	48.1	-	-
Mean	57.2	57.3	57.4	57.4	32.90	33.10	48.9	49.2	49.3	49.8	33.00	-

Winter Quarter Lightship (Figure 13, Table 13)

From March through July surface temperatures exceeded both the mean and the 1956 record. The maximum occurred during the last ten days of July, followed by a drop and a second slight increase in mid-September. Autumn cooling was slightly slower than the mean and comparable to 1956.

Minimum temperatures of less than 41°F, both surface and bottom, occurred in early March, and were slightly above the 1956 minima. As in 1956 the thermocline started to develop in April; warming, however, of the entire water column had begun a full month earlier.

The bottom maximum of 66°F occurred in early October at the same time as the autumn overturn and was 2° warmer than the 1956 bottom maximum. An intrusion of relatively cold bottom water occurred in September and there is evidence of a similar intrusion during July. (The site of this station is apparently over a steep slope and the maximum depth of the BT trace changed when the regular lightship was replaced by the Relief.)

Surface salinity showed a minimum of 31.79 °/oo in mid-May and a maximum of 33.29 °/oo in mid-March. These values are higher than those in 1956. Freshening through runoff was later and less extreme than in the previous year.

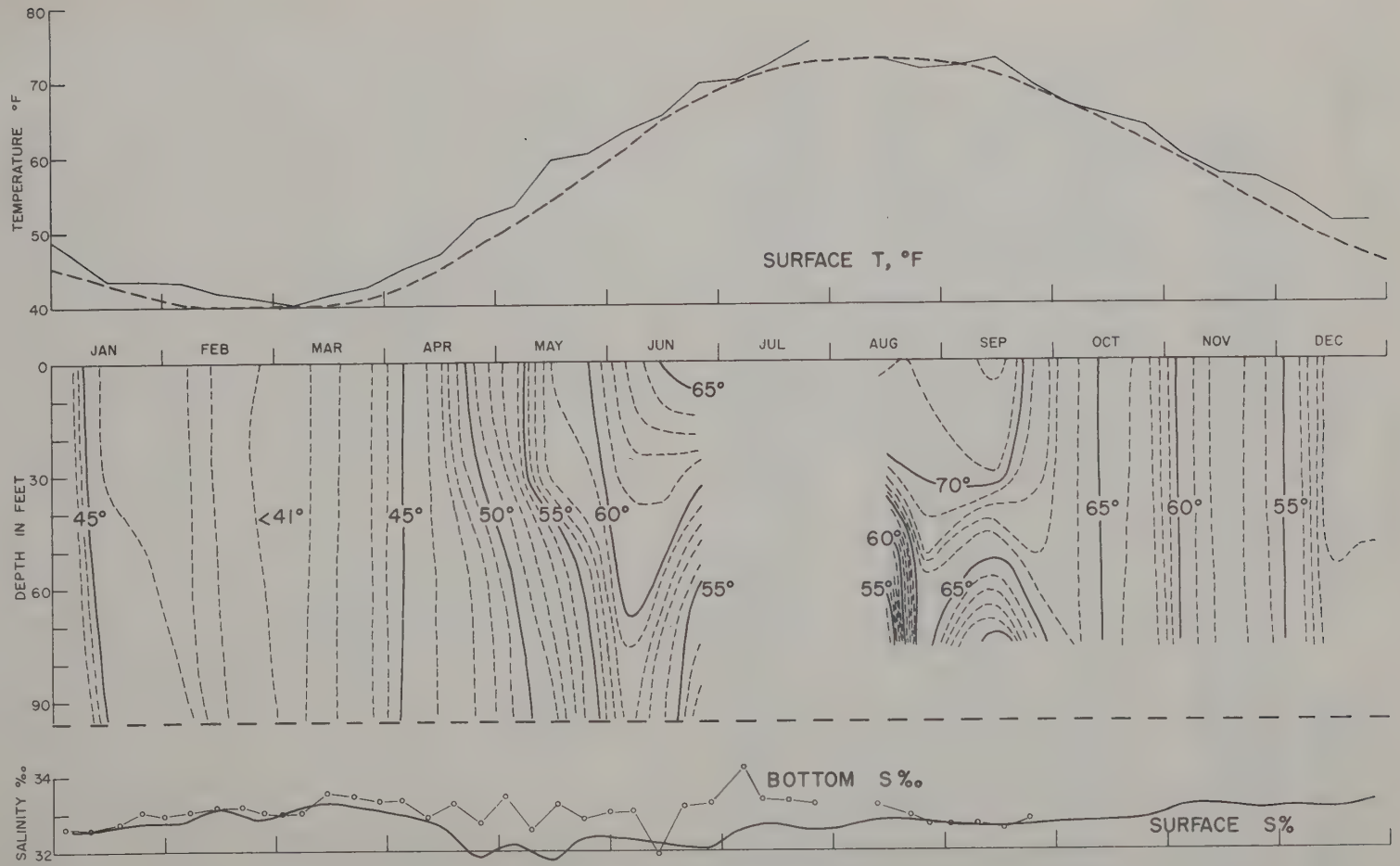

Figure 13. Winter Quarter Lightship, 1957. (Dashed line in upper diagram, mean for period 1925-1940)

Table 13

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1957

Depth / Day	January* Temperature °F 0'	30'	50'	96'	Salinity °/oo 0'	96'	February* Temperature °F 0'	30'	50'	96'	Salinity °/oo 0'	96'
1	49.3	49.7	49.9	49.8	32.62	-	43.0	43.1	43.1	45.1	32.84	-
2	48.1	48.1	48.5	48.6	.49	-	43.0	43.1	43.4	43.9	32.84	-
3	47.4	48.1	48.1	48.1	.49	32.60	44.1	44.1	44.1	44.1	33.06	-
4	48.1	48.1	48.1	48.1	.67	-	42.5	42.8	44.3	45.9	32.35	-
5	48.4	48.6	48.6	48.6	.86	-	41.5	41.7	42.0	45.0	.03	-
6	47.2	47.3	47.4	47.4	.61	-	44.8	44.8	44.8	44.8	32.28	-
7	46.2	46.7	47.1	47.1	.45	-	43.5	43.7	44.0	44.0	33.09	33.07
8	45.8	46.0	46.1	46.1	.53	-	-	-	-	-	.29	-
9	45.7	46.1	46.2	46.5	.43	-	44.2	44.2	44.3	44.7	33.25	-
10	45.6	45.6	45.6	47.0	.31	32.57	43.5	44.0	44.2	44.8	32.91	-
11	45.6	45.7	45.8	46.0	.50	-	-	-	-	-	33.24	-
12	45.1	45.1	45.2	45.4	.71	-	-	-	-	-	.09	-
13	44.3	44.8	45.8	46.9	.37	-	42.0	42.2	42.4	42.3	.13	33.12
14	44.9	44.9	45.1	45.7	.53	-	42.0	42.0	42.4	-	33.13	-
15	44.2	44.5	44.5	44.9	32.73	-	41.8	41.8	41.9	42.1	32.94	-
16	-	-	-	-	33.12	-	-	-	-	-	33.23	-
17	44.3	44.3	44.4	44.7	32.81	32.69	-	41.9	41.8	42.7	.21	-
18	40.4	40.5	40.6	40.7	.85	-	41.8	41.8	41.9	42.1	.13	-
19	40.9	41.6	42.7	-	.62	-	-	-	-	-	-	-
20	42.1	44.0	44.2	45.8	.30	-	41.7	41.8	41.9	41.9	.16	-
21	38.2	39.3	40.8	-	.30	-	-	-	-	-	33.16	33.18
22	-	-	-	-	.34	-	40.8	40.9	41.2	41.7	32.85	-
23	44.9	44.8	45.2	47.7	.81	-	-	-	-	-	32.94	-
24	44.6	44.7	44.9	45.3	.96	33.05	41.5	41.5	41.7	42.2	33.02	-
25	44.6	44.6	44.8	-	.84	-	-	-	-	-	32.66	-
26	44.1	44.1	44.2	44.5	.84	-	42.0	41.2	41.7	42.0	.66	-
27	44.0	44.1	44.1	44.1	.84	-	39.4	39.0	39.1	39.2	.53	-
28	43	-	-	-	.76	-	41.8	41.8	41.8	41.9	32.94	33.02
29	44.1	44.1	44.1	45.3	.73	-						
30	44.2	44.3	44.5	44.8	.84	-						
31	43.9	44.0	44.1	44.2	32.95	32.93						
Mean	44.8	45.1	45.4	46.1	32.66	32.77	42.4	42.4	42.6	43.2	32.92	33.10

* - Jan 11th through July: Water in BT bellows - Temperature values read from proportional length of trace.

Table 13 (cont'd)

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1957

	March*						April*					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	96'	0'	96'	0'	30'	50'	96'	0'	96'
1	38.2	38.2	38.6	38.8	33.45	-	-	-	-	-	33.19	-
2	41.2	41.2	41.6	41.9	.20	-	43.4	43.7	43.8	44.0	.26	-
3	41.5	41.7	42.2	42.3	33.04	-	-	-	-	-	.02	-
4	40.0	40.2	40.7	42.0	31.87	-	44.5	44.7	44.8	44.9	.09	33.34
5	39.4	39.7	39.8	40.0	33.30	-	-	-	-	-	.18	-
6	40.0	40.0	40.1	40.3	.30	-	45.0	45.0	45.1	45.1	33.06	-
7	40.7	41.1	41.1	41.0	.02	33.01	45.3	45.3	45.3	45.4	32.57	-
8	41.4	41.5	41.5	41.7	.20	-	-	45.4	45.4	45.6	.58	-
9	42.0	42.0	42.2	42.1	.56	-	45.8	45.8	45.9	46.0	.57	-
10	37.3	37.3	37.4	38.1	33.22	-	46.0	46.0	46.0	46.1	.89	-
11	40.6	40.5	40.7	42.1	34.04	-	46.4	46.2	45.9	46.0	32.62	32.89
12	41.0	41.2	41.8	42.4	32.25	-	46.7	46.7	46.5	46.0	33.04	-
13	42.0	42.0	42.0	42.0	33.49	-	-	-	-	-	32.68	-
14	42.7	42.7	42.7	42.5	.58	33.59	-	-	-	-	.67	-
15	39.5	38.8	38.6	38.5	.59	-	46.5	46.5	46.5	46.7	.70	-
16	43.2	42.9	42.9	42.9	.36	-	47.0	46.7	46.8	47.1	.62	-
17	39.9	39.8	39.7	40.0	33.34	-	44.1	43.9	43.8	44.0	.64	-
18	43.4	43.5	43.8	44.0	32.52	-	47.7	47.3	47.2	47.1	.55	33.25
19	44.2	43.9	43.3	43.5	33.34	-	-	-	-	-	.55	-
20	40.4	40.4	40.7	40.8	.41	-	49.0	47.3	46.9	47.0	.47	-
21	42.4	42.5	42.7	42.8	.45	33.45	49.8	48.2	46.5	46.6	.42	-
22	42.6	42.7	42.7	42.9	.27	-	50.1	50.0	-	47.0	.53	-
23	42.9	42.9	42.9	42.8	.30	-	-	-	-	-	.29	-
24	43.1	43.0	43.0	43.0	.05	-	51.3	49.3	47.8	47.5	.24	-
25	43.0	42.9	42.9	42.9	.25	-	53.3	49.3	48.1	47.8	32.25	32.71
26	42.4	42.4	42.4	42.4	.22	-	52.0	51.9	48.6	47.5	31.85	-
27	42.0	42.0	42.0	42.1	33.07	-	54.0	48.4	47.8	47.0	.19	-
28	-	-	-	-	32.98	33.31	50.1	48.4	47.7	47.0	.21	-
29	42.0	42.2	42.5	43.1	.97	-	-	52.7	47.7	47.4	.09	-
30	-	-	-	-	32.36	-	-	-	-	-	31.18	-
31	43.1	43.1	43.1	43.2	33.30	-						
Mean	41.5	41.5	41.6	41.8	33.17	33.34	47.9	47.2	46.4	46.3	32.47	33.05

* - Jan 11th through July: Water in BT bellows - Temperature values read from proportional length of trace.

Table 13 (cont'd)

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1957

	May*						June*					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	96'	0'	96'	0'	30'	50'	96'	0'	96'
1	56.3	55.2	50.1	48.3	30.44	-	63.8	60.1	58.5	56.2	32.57	-
2	55.0	54.9	53.4	48.2	32.25	33.48	63.5	58.7	57.8	57.4	.35	-
3	47.2	47.2	47.0	44.1	32.94	-	-	-	-	-	.10	-
4	51.0	50.8	50.5	49.9	33.04	-	63.0	60.0	58.8	58.7	32.41	-
5	50.9	50.8	50.8	50.2	32.84	-	-	-	-	-	31.70	-
6	50.5	50.3	50.2	49.8	33.11	-	64.0	62.2	61.9	55.8	31.38	33.02
7	52.3	51.0	50.8	50.1	32.78	-	-	-	-	-	-	-
8	55.1	51.2	51.0	50.9	31.76	-	63.8	63.8	63.7	-	32.48	-
9	56.6	53.8	51.1	50.9	.12	32.53	61.3	61.4	61.5	61.6	.80	-
10	57.6	57.2	52.7	51.1	.50	-	61.7	61.7	61.7	61.5	.89	-
11	57.4	47.2	50.3	49.1	31.75	-	62.1	61.8	61.8	62.0	.85	-
12	57.8	57.0	52.5	50.3	-	-	63.9	63.3	62.8	61.4	32.69	-
13	58.6	57.2	50.9	50.6	31.50	-	65.8	62.6	61.4	57.0	31.88	31.91
14	59.7	56.1	51.8	50.9	.63	-	64.6	63.4	62.2	-	.99	-
15	60.3	59.3	53.1	51.0	.76	-	63.8	59.9	58.8	57.9	31.97	-
16	61.3	60.9	53.1	50.1	31.88	33.23	63.3	60.6	57.0	55.4	32.37	-
17	59.1	57.9	54.4	51.0	32.00	-	69.8	60.2	58.2	54.7	32.05	-
18	59.8	59.4	57.1	51.7	32.10	-	67.0	62.0	59.3	54.3	31.69	-
19	59.8	59.8	59.3	51.0	31.32	-	67.5	62.0	60.1	56.4	31.91	-
20	60.1	59.7	54.9	52.8	32.15	-	62.8	61.7	60.0	53.0	32.04	33.20
21	58.0	57.2	56.3	55.2	.88	-	71.0	64.2	61.2	53.3	32.00	-
22	56.8	56.2	56.0	55.3	.73	-	66.6	63.4	60.8	-	32.00	-
23	57.3	55.8	55.0	54.3	.47	32.85	-	-	-	-	31.91	-
24	59.2	57.7	57.1	54.2	.11	-	69.1	61.0	58.6	52.1	32.18	-
25	59.7	57.8	56.7	54.8	.20	-	71.7	62.5	58.0	52.1	.02	-
26	60.7	58.2	56.8	55.0	.28	-	70.0	59.6	58.0	51.6	.10	-
27	61.3	60.5	57.0	53.2	.30	-	71.0	58.8	55.0	53.8	.10	33.28
28	61.7	60.3	57.0	52.6	.31	-	73.0	60.7	54.8	52.6	32.17	-
29	62.0	61.5	58.1	53.3	.31	-	66.8	59.4	53.0	51.1	31.94	-
30	62.0	61.3	56.9	54.6	.31	33.04	66.6	54.8	52.0	51.9	32.19	-
31	62.3	59.8	55.2	55.1	32.33	-						
Mean	57.7	56.6	53.8	51.6	32.1	33.23	66.1	61.1	59.1	55.7	32.16	32.85

* - Jan 11th through July: Water in BT bellows - Temperature values read from proportional length of trace.

Table 13 (cont'd)

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1957

Depth / Day	July* Temperature °F 0'	30'	50'	95'	July* Salinity °/oo 0'	95'	August Temperature °F 0'	30'	50'	75'	August Salinity °/oo 0'	95'
1	70	-	-	-	32.31	-	-	-	-	-		-
2	71	-	-	-	32.35	-	-	-	-	-		-
3	72	-	-	-	-	-	-	-	-	-		-
4	69	-	-	-	-	-	-	-	-	-		-
5	69	-	-	-	32.38	-	-	-	-	-		-
6	68.5	-	-	-	.89	34.21	-	-	-	-		-
7	68	-	-	-	.67	-	74.6	73.8	55.5	-	32.62	-
8	68.5	-	-	-	.72	-	74.3	59.5	55.2	-	32.87	-
9	71				.62	-	69.7	67.1	52.1	-	-	-
10	70				.71	-	73.9	70.0	53.5	51.3	32.82	-
11	70				.74	33.39	73.4	68.8	58.4	53.9	.86	-
12	70				.74	-	70.9	66.1	52.7	52.5	.85	33.22
13	71				.82	-	71.8	62.3	55.0	54.5	32.94	-
14	72				.62	-	74.9	70.8	61.1	54.8	33.00	-
15	72				.72	-	71.8	70.5	54.2	52.2	32.87	-
16	72				.68	-	74.7	72.1	57.5	51.2	.96	-
17	73.5				.67	-	71.1	70.1	62.3	54.0	.76	-
18	73.5				.73	33.38	71.6	66.6	56.8	54.1	32.88	-
19	74				.64	-	-	-	-	-	-	-
20	74.5				.64	-	-	-	-	-	32.68	-
21	75.5				.64	-	70.7	69.6	67.5	57.6	.65	32.95
22	74				.44	-	70.7	68.7	67.6	58.1	.66	-
23	73				.44	-	71.2	71.3	67.5	63.2	.64	-
24	73				.67	-	71.9	71.8	70.4	67.8	.67	-
25	74.5				.55	33.29	71.7	71.6	68.2	67.5	.80	-
26	75.5				.69	-	-	-	-	-	.66	32.72
27	75				.60	-	71.1	69.7	67.1	66.0	.68	-
28	75.5				.11	-	70.0	69.7	68.9	67.5	.74	-
29	76				.33	-	71.9	70.7	68.3	68.0	.81	-
30	76.5				.37	-	71.9	71.3	69.1	68.8	.82	-
31	76.5				32.73	-	71.8	69.9	69.1	68.6	32.82	-
Mean	72.4				32.59	33.57	72.1	69.2	61.7	59.6	32.77	-

* 1-31 July. Surface temperature read from bucket thermometer.

Table 13 (cont'd)

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1957

	September						October					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	75'	0'	75'	0'	30'	50'	75'	0'	75'
1	71.1	70.2	69.4	67.0	32.02	-	66.1	66.0	66.0	65.9	32.69	-
2	71.4	69.8	69.1	68.1	.29	32.72	65.9	65.8	65.8	65.4	32.71	-
3	71.5	69.5	67.2	63.2	.73	-	65.8	65.8	65.8	65.6	-	-
4	74.8	69.5	61.2	60.9	.70	-	65.8	65.6	65.5	65.5	32.69	-
5	71.8	70.4	65.6	-	.66	-	-	-	-	-	-	-
6	71.2	70.7	67.0	59.0	.70	-	-	-	-	-	-	-
7	70.8	70.1	64.1	57.0	.69	-	-	-	-	-	-	-
8	71.0	70.1	63.5	54.0	32.70	-	66.9	66.8	66.9	66.7	32.61	-
9	70.9	70.5	69.0	-	33.06	32.70	66.3	66.1	66.1	66.1	.78	-
10	71.2	70.9	64.5	59.1	32.63	-	67.1	66.7	66.7	66.7	.91	-
11	71.8	70.9	67.0	61.2	.70	-	-	-	-	-	.67	-
12	71.4	69.5	64.3	-	.59	-	-	-	-	-	.76	-
13	72.5	68.1	62.5	57.8	.69	-	65.9	65.3	65.4	65.3	.73	-
14	71.9	71.1	70.3	69.0	.49	-	-	-	-	-	.76	-
15	74.1	70.5	69.0	55.5	.44	-	-	-	-	-	.78	-
16	73.9	72.3	59.8	55.8	.52	32.60	-	-	-	-	.73	-
17	74.5	74.0	66.5	55.5	32.69	-	-	-	-	-	.78	-
18	-	-	-	-	-	-	-	-	-	-	.77	-
19	71.1	71.1	69.8	67.2	32.70	-	-	-	-	-	.74	-
20	72.8	71.2	58.0	55.1	.70	-	-	-	-	-	.78	-
21	71.9	70.9	68.8	65.9	.62	-	-	-	-	-	.78	-
22	71.8	71.1	64.0	58.9	.62	-	64.8	64.4	64.4	64.6	.74	-
23	-	-	-	-	.69	32.85	64.3	64.2	64.0	64.0	.74	-
24	70.0	69.9	69.7	64.5	.63	-	64.4	63.9	63.9	63.9	32.73	-
25	69.5	68.9	67.8	65.4	.80	-	63.0	63.0	63.0	63.0	33.08	-
26	69.4	68.9	66.7	63.2	.75	-	-	-	-	-	-	-
27	66.8	66.9	66.9	66.8	.73	-	-	-	-	-	-	-
28	66.8	66.8	66.8	66.8	.77	-	-	-	-	-	-	-
29	66.9	66.9	66.9	66.9	32.78	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-
31							61.8	61.2	61.2	61.2	32.99	-
Mean	71.2	70.0	66.1	61.8	32.65	32.72	65.2	65.0	64.9	64.9	32.77	-

Table 13 (cont'd)

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1957

	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	75'	0'	75'	0'	30'	50'	75'	0'	75'
1	-	-	-	-	-	-	56.2	56.1	56.1	56.1	33.09	-
2	-	-	-	-	-	-	-	-	-	-	.35	-
3	60.0	59.9	59.9	59.9	33.12	-	56.0	56.0	55.9	55.9	.46	-
4	60.0	59.9	59.9	59.9	.11	-	55.3	55.6	55.8	55.8	33.35	-
5	59.9	59.9	59.9	59.9	.24	-	-	-	-	-	-	-
6	-	-	-	-	.12	-	52.0	52.0	52.0	52.0	32.94	-
7	59.1	59.1	59.1	59.1	.17	-	54.0	52.6	52.5	52.6	32.97	-
8	-	-	-	-	.20	-	54.3	54.5	54.5	54.9	33.23	-
9	59.0	59.0	59.0	58.9	.25	-	53.0	53.1	53.6	54.1	32.78	-
10	-	-	-	-	.22	-	-	-	-	-	.88	-
11	57.2	57.2	57.2	57.2	.23	-	-	-	-	-	.88	-
12	-	-	-	-	.11	-	-	-	-	-	.85	-
13	-	-	-	-	.16	-	50.7	50.7	50.7	50.7	32.85	-
14	57.1	57.1	57.1	57.0	.16	-	51.8	51.8	51.8	51.8	33.29	-
15	-	-	-	-	.17	-	51.4	51.4	51.5	52.5	.40	-
16	57.1	57.1	57.0	57.0	.13	-	50.5	50.3	50.6	50.6	.04	-
17	-	-	-	-	.22	-	51.1	51.1	51.1	51.6	.24	-
18	-	-	-	-	.20	-	50.6	50.5	50.5	50.6	33.30	-
19	-	57.9	57.7	57.5	.12	-	49.5	49.6	49.6	49.6	32.91	32.96
20	57.7	57.3	57.4	57.4	.22	-	49.8	50.0	50.9	51.1	33.19	-
21	-	-	-	-	.23	-	51.0	51.0	51.2	53.3	.15	-
22	57.2	57.2	57.2	57.5	.08	-	50.1	50.1	52.2	52.8	33.02	-
23	57.2	57.2	57.2	57.2	.11	-	50.2	50.2	50.7	52.8	32.97	-
24	-	-	-	-	.11	-	51.1	51.1	53.0	53.0	33.17	-
25	57.0	56.9	56.9	57.7	.12	-	50.9	50.9	50.9	50.9	33.36	-
26	-	-	-	-	.14	-	-	-	-	-	-	-
27	56.3	56.2	56.3	56.2	.04	-	51.2	51.2	51.2	51.2	33.37	-
28	56.6	56.3	56.2	56.2	33.12	-	51.5	51.3	51.3	51.3	.49	-
29	57.1	57.0	57.0	57.0	32.96	-	51.1	51.3	51.3	51.3	.45	-
30	56.8	56.8	56.7	56.8	32.99	-	50.7	50.7	50.7	50.7	.23	-
31							50.0	50.0	50.0	50.1	33.35	-
Mean	57.8	57.8	57.7	57.8	33.14	-	51.8	51.7	52.0	52.3	33.16	-

Chesapeake Lightship (Figure 14, Table 14)

Temperatures showed a minimum, both surface and bottom of less than 42°F in mid-February. A month later a false thermocline appeared briefly when relatively warm and much fresher Chesapeake Bay water arrived at the station. Ten days later salinities returned to their previous level (ca. 32.0 °/oo) and the water again became isothermal, though about 1° warmer. A similar sequence of events occurred in March of the previous year. From the end of March to mid-June warming was in advance of the mean and the 1956 record. A surface maximum of greater than 76°F occurred in July and August and again in mid-September.

At the end of August the thermocline was destroyed, bringing water of greater than 72°F to the bottom. During September, warm water of lower salinity from Chesapeake Bay produced a second thermocline, which in turn was destroyed at the end of the month. This sequence of events created bottom temperatures of greater than 70°F and maintained them for a full month.

The intrusion of cold water at the bottom in July was more pronounced and of longer duration than was a similar penetration a year earlier. Bumpus observed that the 1956 intrusion followed a period of preponderant strong southerly winds which tended to move surface water offshore and allow this encroachment of colder water at depth. Similar conditions prevailed in 1957. Winds became predominately southerly and southwesterly in mid-June, when the intrusion first appeared; in mid-August northeasterly winds prevailed to pile up surface water and force a retreat of the colder bottom water. During the last 10 days of August northeasterly winds became even more prevalent and temporarily destroyed the thermocline. The first three weeks of September showed winds again mostly from southerly quarters, during which time warm fresh water from the bay flowed seaward and created a weak thermocline to 40 feet. During the last 10 days of September strong northeasterly winds accounted for the destruction of the thermocline.

Salinities, both surface and bottom, while showing the wide fluctuations to be expected here, were nevertheless generally higher than those of 1956.

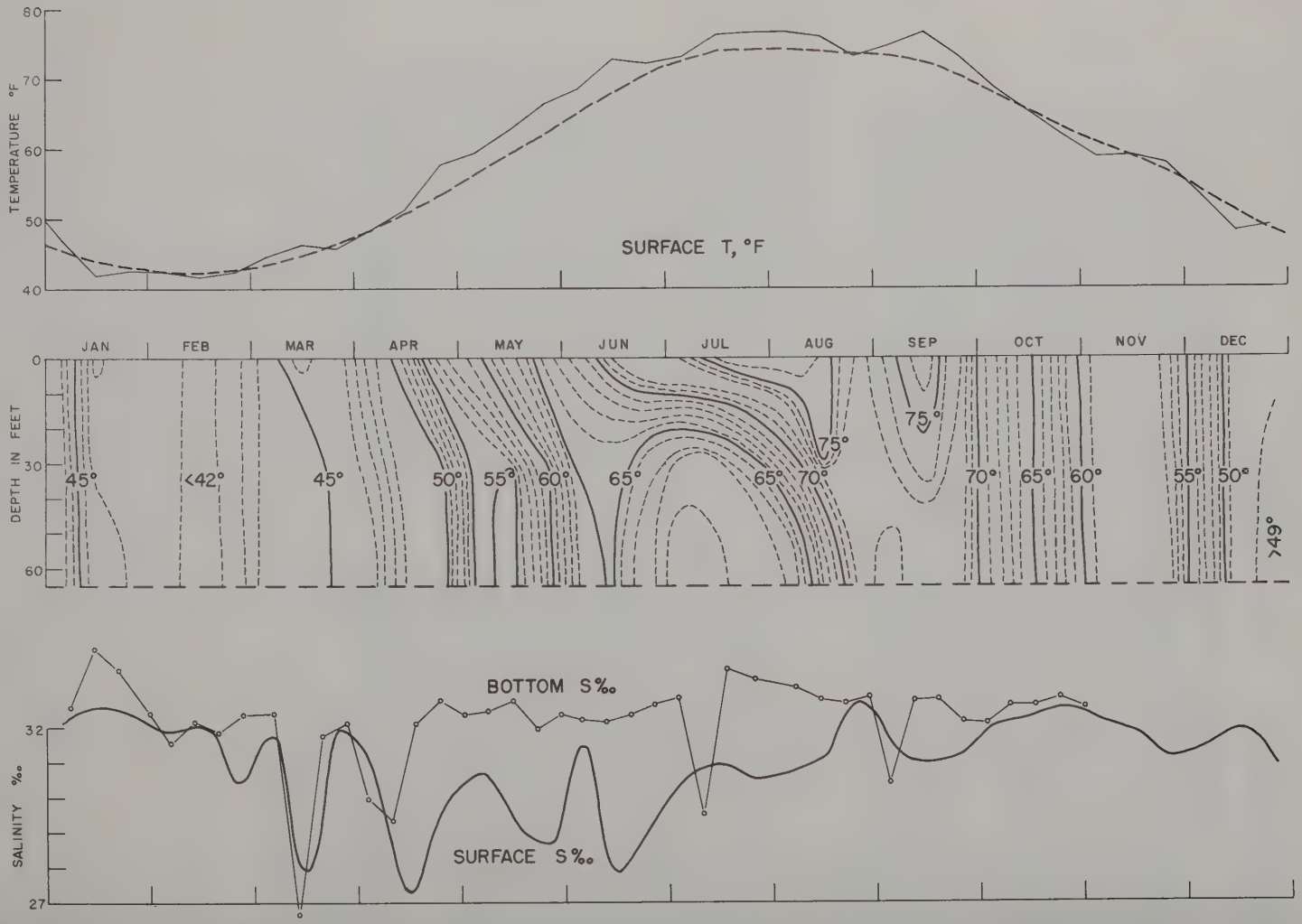

Figure 14. Chesapeake Lightship, 1957. (Dashed line in upper diagram, mean for period 1947-1956)

Table 14

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W. Depth of water - 65 feet

1957

Depth / Day	January Temperature °F 0'	30'	50'	65'	January Salinity °/oo 0'	65'	February Temperature °F 0'	30'	50'	65'	February Salinity °/oo 0'	65'
1	49.8	50.0	50.1	50.1	31.89	-	43.0	43.0	43.0	43.0	32.35	-
2	48.3	48.3	48.4	48.4	32.06	-	42.8	42.9	42.8	42.8	.34	-
3	47.3	47.4	47.5	47.5	.22	-	42.9	42.9	42.9	42.9	32.34	-
4	46.7	46.4	46.3	46.3	32.35	-	42.9	42.8	42.7	42.6	31.56	-
5	46.1	47.2	47.9	47.8	31.21	-	42.6	42.7	42.6	42.7	.50	-
6	46.7	47.0	47.0	47.0	32.67	-	-	-	-	-	.52	31.54
7	46.9	47.1	47.1	47.1	.59	32.58	42.4	42.5	42.2	42.1	.50	-
8	45.9	46.0	46.1	46.1	.63	-	42.7	42.5	42.5	42.5	31.52	-
9	46.3	46.4	46.5	46.5	32.80	-	-	-	-	-	32.12	-
10	45.7	47.3	47.4	47.4	30.94	-	40.0	40.0	40.0	40.0	.10	-
11	45.3	45.9	45.9	45.9	33.59	-	-	-	-	-	.40	-
12	45.8	45.6	45.9	45.9	32.59	-	-	-	-	-	32.13	-
13	45.2	46.1	46.2	46.1	33.92	-	-	-	-	-	31.87	32.15
14	42.7	42.7	42.9	43.0	32.86	34.26	-	-	-	-	31.90	-
15	42.7	42.9	42.9	42.9	.65	-	-	-	-	-	32.15	-
16	42.4	42.9	42.9	43.0	32.76	-	40.5	40.8	40.9	41.0	31.90	-
17	42.0	42.1	42.1	42.1	33.04	-	-	-	-	-	32.15	-
18	34.9	34.9	-	-	33.63	-	41.6	41.6	41.8	42.0	31.89	-
19	38.7	40.5	40.5	40.6	32.02	-	41.8	41.7	41.5	41.5	32.15	-
20	38.9	42.4	42.7	42.8	28.89	-	42.5	42.1	42.0	41.9	31.86	31.86
21	-	-	-	-	28.12	33.64	42.0	41.9	41.7	41.5	31.86	-
22	41.4	42.8	42.7	42.8	32.35	-	42.3	42.0	41.8	41.8	32.47	-
23	40.8	43.2	43.3	43.3	33.35	-	42.2	41.8	41.9	41.9	.42	-
24	42.8	42.9	42.7	42.7	32.33	-	42.4	42.0	42.0	42.1	.43	-
25	43.5	43.2	43.1	43.1	32.39	-	42.1	42.5	42.5	42.5	27.30	-
26	42.8	42.8	42.8	42.8	32.44	-	43.2	43.0	43.0	43.0	.31	-
27	43.0	43.0	43.0	43.1	34.19	-	42.9	42.8	42.7	43.0	27.34	32.35
28	43.0	42.9	43.0	43.0	33.27	-	-	-	-	-	32.37	-
29	43.1	42.8	42.8	42.8	32.46	-						
30	43.0	42.5	42.5	42.5	32.76	32.40						
31	-	-	-	-	32.58	-						
Mean	43.9	44.3	44.7	44.7	32.37	33.22	42.3	42.2	42.1	42.1	31.53	31.98

Table 14 (cont'd)

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W. Depth of water - 65 feet

1957

	March						April					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	65'	0'	65'	0'	30'	50'	65'	0'	65'
1	44.7	44.7	44.4	44.3	32.35	-	45.3	45.2	44.9	44.9	32.11	-
2	44.5	44.5	-	-	32.35	-	46.9	45.1	45.1	45.1	29.72	-
3	-	-	-	-	32.39	-	-	45.2	45.2	45.2	29.95	29.96
4	44.9	44.0	44.0	-	32.38	-	47.4	47.1	45.1	45.0	-	-
5	-	-	-	-	32.37	-	47.9	46.0	45.0	45.0	29.46	-
6	-	-	-	-	32.38	32.38	-	-	-	-	-	-
7	-	-	-	-	32.37	-	48.5	46.5	44.5	44.4	29.60	-
8	-	-	-	-	32.35	-	52.7	48.1	47.1	47.1	31.89	-
9	-	-	-	-	32.37	-	-	-	-	-	-	-
10	-	-	-	-	25.89	-	49.2	48.6	48.8	48.8	31.84	29.35
11	-	-	-	-	25.86	-	51.3	48.9	48.8	48.8	29.64	-
12	45.0	43.8	43.9	43.8	26.62	-	53.1	49.0	49.0	49.0	26.37	-
13	44.8	44.3	44.1	44.1	26.61	26.64	50.0	49.6	49.0	48.8	-	-
14	46.0	44.2	44.0	44.0	25.84	-	49.8	49.0	49.0	49.0	30.40	-
15	46.0	44.5	44.2	44.0	28.96	-	50.0	49.5	49.3	49.2	31.51	-
16	47.5	44.2	44.0	44.0	29.04	-	50.2	49.2	49.1	49.1	-	-
17	47.0	44.3	44.2	-	26.94	-	51.0	49.5	49.5	49.4	28.23	32.10
18	46.6	44.2	44.3	44.2	29.50	-	50.4	48.8	48.4	48.4	23.79	-
19	47.5	44.6	44.5	44.5	-	-	53.6	49.4	49.0	49.1	22.20	-
20	45.5	45.6	45.5	45.5	31.74	31.75	53.7	49.3	49.0	49.0	26.51	-
21	44.8	44.8	44.8	44.8	31.75	-	55.4	49.4	49.0	-	24.61	-
22	44.5	44.7	44.7	-	31.64	-	57.2	49.3	49.3	49.2	26.48	-
23	45.0	44.3	44.2	44.1	31.70	-	55.7	48.0	48.0	48.0	28.65	-
24	45.9	45.1	44.8	44.5	31.61	-	56.6	49.5	49.3	49.3	28.03	32.77
25	-	-	-	-	-	-	57.8	49.3	48.9	48.9	31.63	-
26	44.5	44.3	44.4	44.3	32.13	-	57.1	50.3	49.7	49.6	31.37	-
27	45.9	45.1	45.1	45.1	32.09	32.10	57.7	50.4	50.4	50.4	31.37	-
28	45.8	45.1	45.1	45.1	32.19	-	59.0	50.7	50.5	50.4	31.37	-
29	46.8	46.4	46.4	46.3	32.02	-	60.5	50.2	50.1	50.0	31.48	-
30	46.3	46.4	46.3	46.2	32.11	-	61.6	51.3	51.2	51.1	31.94	-
31	46.9	46.7	46.4	46.2	31.95	-						
Mean	45.7	44.8	44.7	44.7	30.60	30.72	52.9	48.7	48.3	48.2	29.21	31.04

Table 14 (cont'd)

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W. Depth of water - 65 feet

1957

Depth / Day	May Temperature °F 0'	30'	50'	55'	May Salinity °/oo 0'	65'	June Temperature °F 0'	30'	50'	55'	June Salinity °/oo 0'	65'
1	61.5	51.7	51.6	51.5	29.68	32.34	67.9	63.6	61.2	60.0	30.72	-
2	59.5	52.6	52.2	52.2	32.38	-	68.5	65.0	63.4	63.3	31.71	-
3	57.8	57.2	56.9	56.6	32.51	-	69.0	64.0	62.9	62.9	.21	-
4	57.4	57.4	57.4	57.4	32.69	-	68.7	66.6	65.4	65.3	.77	-
5	56.9	56.9	56.7	56.7	32.49	-	69.0	66.3	65.4	65.3	.05	32.20
6	57.0	56.5	56.5	56.5	32.42	-	67.4	66.0	65.8	65.8	31.91	-
7	58.6	57.1	56.6	56.5	32.38	-	69.4	67.1	66.7	66.7	30.78	-
8	58.7	57.0	56.1	56.0	30.30	32.45	68.7	68.1	66.8	66.7	32.06	-
9	61.0	55.7	55.5	55.5	27.45	-	-	-	-	-	-	-
10	63.9	54.7	54.5	54.5	24.68	-	67.0	66.7	66.6	66.5	32.10	-
11	61.0	54.4	54.4	54.4	28.24	-	67.0	66.0	65.9	65.8	32.16	-
12	61.2	54.4	54.4	54.4	28.26	-	68.6	67.4	67.1	67.1	27.55	32.13
13	60.9	54.5	54.3	54.4	29.08	-	69.3	67.0	66.7	66.5	29.31	-
14	62.5	54.7	54.7	54.7	30.54	-	74.3	65.2	64.7	64.7	27.95	-
15	62.1	54.5	54.5	54.5	29.23	32.74	73.5	65.6	65.0	65.0	26.47	-
16	63.2	54.3	54.2	54.2	29.97	-	76.0	65.4	64.6	-	27.03	-
17	62.0	55.1	54.9	54.9	31.87	-	76.0	65.2	63.9	63.9	24.99	-
18	64.3	55.8	55.5	55.3	30.04	-	75.0	65.0	64.0	63.8	27.24	-
19	64.2	57.0	55.2	55.1	29.99	-	75.0	64.5	63.5	63.5	26.88	32.32
20	64.7	55.6	54.8	54.8	26.82	-	72.0	65.0	64.4	64.3	29.14	-
21	63.1	60.2	59.8	59.1	30.90	-	75.1	65.0	63.5	63.0	26.00	-
22	63.5	62.0	60.3	60.1	30.90	31.93	75.0	64.5	63.8	-	26.13	-
23	66.8	62.0	58.9	58.8	24.02	-	74.3	64.4	63.5	63.0	27.48	-
24	65.4	59.2	57.4	57.2	28.31	-	72.7	63.9	63.6	63.5	27.82	-
25	67.0	58.8	57.7	57.7	27.52	-	72.7	63.6	63.3	63.3	26.62	-
26	67.6	59.0	58.2	58.1	27.56	-	71.0	64.6	62.7	62.5	31.03	32.62
27	67.2	58.6	57.3	57.3	29.52	-	70.6	62.9	58.5	-	.56	-
28	67.0	57.8	57.7	57.6	29.49	-	72.5	62.8	-	-	31.34	-
29	66.9	57.8	57.6	57.6	30.32	32.35	68.2	62.2	61.0	61.0	32.19	-
30	68.4	59.2	58.8	-	27.16	-	69.0	62.6	59.9	-	31.80	-
31	67.0	62.3	59.6	-	29.65	-						
Mean	62.8	56.9	56.3	56.0	29.56	32.36	71.2	65.0	64.1	64.3	29.45	32.32

Table 14 (cont'd)

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W. Depth of water - 65 feet

1957

Depth / Day	July Temperature °F 0'	30'	50'	55'	July Salinity °/oo 0'	65'	August Temperature °F 0'	30'	50'	65'	August Salinity °/oo 0'	65'
1	77.0	63.9	58.3	57.7	31.88	-	75.4	61.7	61.7	61.7	30.07	-
2	77.7	62.3	59.9	58.7	32.15	-	76.9	62.3	61.1	61.1	29.72	-
3	79.5	62.3	61.8	61.6	32.31	32.82	76.4	61.6	61.3	61.2	27.39	-
4	79.1	63.2	61.7	60.9	30.96	-	79.9	75.0	63.1	62.6	30.84	-
5	78.2	62.3	62.0	62.0	.74	-	78.8	62.9	61.8	61.7	30.67	-
6	73.8	62.3	61.4	61.3	30.89	-	75.5	69.5	62.1	-	31.62	-
7	74.2	61.7	60.9	60.8	29.85	-	74.8	72.8	63.4	62.9	.63	33.11
8	74.8	61.3	61.2	61.1	29.61	-	76.2	-	64.0	62.8	31.75	-
9	75.8	60.8	60.7	60.6	28.98	-	74.8	72.8	62.3	61.9	32.04	-
10	74.4	60.8	60.3	60.2	29.51	29.50	76.0	74.9	63.4	62.5	31.37	-
11	76.3	60.8	60.8	60.8	31.36	-	76.8	76.2	63.1	62.8	32.65	-
12	75.5	61.3	61.0	-	28.53	-	76.5	73.5	63.9	62.4	30.02	-
13	76.0	61.3	60.9	60.9	28.01	-	76.8	76.7	67.4	67.0	30.89	-
14	76.0	60.3	-	-	30.99	-	75.9	73.3	71.2	69.0	32.87	32.78
15	76.0	60.8	60.5	60.5	31.18	-	76.0	76.0	70.1	69.6	30.51	-
16	77.2	61.2	60.9	-	.50	-	76.2	76.0	67.0	65.9	31.03	-
17	76.5	61.2	61.2	61.2	.85	33.67	76.8	75.9	67.5	66.9	32.35	-
18	76.1	61.2	60.9	60.9	.88	-	75.6	75.0	71.7	-	32.08	-
19	-	-	-	-	31.89	-	-	-	-	-	-	-
20	76.2	62.6	61.8	-	32.04	-	72.9	72.8	71.8	71.7	27.79	-
21	76.7	63.2	62.0	-	30.53	-	73.0	72.2	72.0	71.8	32.76	32.67
22	75.8	61.7	60.7	-	29.05	-	72.7	72.1	71.9	71.8	32.71	-
23	77.0	61.8	61.1	61.1	28.96	-	72.1	72.1	72.1	71.9	32.95	-
24	76.5	-	60.3	60.3	31.66	-	72.2	72.1	72.1	72.0	32.79	-
25	76.2	-	62.2	62.0	32.08	33.36	72.8	72.1	72.1	-	31.49	-
26	75.0	-	62.6	62.4	31.91	-	73.0	71.9	71.8	-	32.77	-
27	75.0	63.5	61.6	61.5	31.88	-	72.9	72.3	72.0	72.0	.79	-
28	77.5	71.0	61.8	61.8	30.72	-	72.9	72.5	72.2	-	.92	32.84
29	77.1	-	60.8	60.8	29.34	-	72.2	71.9	71.8	-	.84	-
30	75.8	66.5	60.7	60.6	.90	-	74.2	73.8	73.5	-	.79	-
31	77.8	62.8	61.2	61.1	29.74	-	74.8	74.2	73.7	73.5	32.75	-
Mean	75.2	62.3	61.0	60.9	30.67	32.34	75.0	71.9	67.8	66.4	31.56	32.85

Table 14 (cont'd)

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W Depth of water - 65 feet

1957

	September						October					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	65'	0'	65'	0'	30'	50'	65'	0'	65'
1	74.3	72.9	72.1	72.0	32.80	-	70.5	70.5	70.4	70.3	31.91	-
2	74.8	73.1	72.1	71.9	32.87	-	70.8	70.5	70.4	70.5	31.75	32.10
3	76.6	72.1	71.9	71.9	29.10	-	70.2	70.2	70.2	70.3	32.17	-
4	75.9	72.7	71.9	-	30.41	30.40	69.7	69.7	69.7	69.7	32.46	-
5	73.3	72.9	72.0	-	31.88	-	-	-	-	-	-	-
6	73.7	73.0	72.1	72.0	.87	-	67.8	67.8	67.8	67.8	-	-
7	74.0	73.8	71.9	-	31.47	-	66.5	67.3	67.3	67.3	30.97	-
8	73.4	71.7	71.2	71.1	30.77	-	67.2	67.1	67.3	67.3	32.28	-
9	74.3	73.3	72.0	71.9	31.61	-	67.3	66.9	66.9	66.9	.49	32.62
10	76.1	74.3	72.1	72.0	.66	-	68.0	67.1	67.1	67.1	.63	-
11	75.6	74.8	72.2	72.2	.05	32.75	67.1	67.1	67.1	67.1	.60	-
12	77.3	75.1	72.2	72.2	31.34	-	65.9	66.0	66.0	66.0	.73	-
13	77.8	74.6	71.6	71.4	29.64	-	65.1	64.9	64.9	64.9	.73	-
14	76.8	74.4	71.8	71.2	30.42	-	65.9	65.7	65.4	65.3	.73	-
15	76.6	75.1	71.7	71.6	30.96	-	65.2	65.3	65.1	65.1	.67	-
16	76.9	74.7	72.2	69.8	31.12	-	65.1	64.6	64.5	64.5	.63	32.61
17	76.9	73.7	72.0	71.0	.78	-	65.7	65.3	65.2	65.2	32.69	-
18	-	-	-	-	.33	32.79	64.8	65.4	65.2	65.2	29.14	-
19	75.9	75.9	75.7	75.5	.11	-	65.1	64.9	64.9	64.8	32.31	-
20	75.1	74.4	74.6	74.1	31.07	-	63.9	63.9	63.9	63.9	.52	-
21	75.3	75.1	75.1	75.0	29.79	-	64.0	63.9	63.9	63.9	.65	-
22	76.6	75.5	74.2	74.0	29.16	-	-	-	-	-	.63	-
23	75.3	74.7	73.6	-	30.62	-	64.9	63.9	63.8	63.8	.88	32.81
24	-	-	-	-	32.17	-	63.2	63.1	63.4	63.4	32.68	-
25	73.8	73.1	73.1	73.1	.09	32.13	63.7	63.5	63.5	63.5	-	-
26	73.9	73.1	73.0	73.0	32.50	-	63.3	63.4	63.4	63.3	33.00	-
27	72.5	72.5	72.1	72.1	-	-	61.1	61.1	61.1	61.1	.17	-
28	71.0	71.2	71.1	71.0	32.07	-	61.4	61.8	61.8	61.8	33.46	-
29	70.1	70.3	70.2	70.2	-	-	59.8	59.8	59.4	59.3	32.74	-
30	69.2	69.2	69.2	69.2	-	-	58.2	59.5	60.1	60.1	30.27	32.58
31							58.1	59.9	60.1	60.1	31.94	-
Mean	74.8	73.5	72.3	72.1	31.21	32.02	65.2	65.2	65.2	65.2	32.32	32.54

Table 14 (cont'd)

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W Depth of water - 65 feet

1957

	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	65'	0'	65'	0'	30'	50'	65'	0'	65'
1	59.8	60.0	60.0	60.0	-	-	55.3	55.3	55.2	55.0	31.89	-
2	59.0	59.1	59.2	59.2	32.78	-	54.4	54.1	54.1	54.1	.67	-
3	59.3	59.2	59.2	59.2	.63	-	54.0	54.0	54.7	54.7	31.40	-
4	59.7	59.2	59.3	59.3	.84	-	-	-	-	-	-	-
5	59.2	59.2	59.2	59.2	32.76	-	53.7	53.7	53.5	53.5	32.11	-
6	58.8	59.0	59.0	59.0	-	-	53.0	53.0	53.0	53.0	32.78	-
7	59.0	59.0	59.0	59.0	32.72	-	50.1	51.6	51.5	51.4	30.50	-
8	57.2	58.2	58.5	58.5	30.64	-	-	-	-	-	.47	-
9	57.3	57.5	58.2	58.2	30.99	-	51.7	51.8	51.8	51.8	30.18	-
10	57.1	57.6	57.6	57.6	32.19	-	51.6	51.6	51.4	51.4	31.79	-
11	57.1	57.2	57.2	57.4	.61	-	51.0	50.9	50.9	50.9	32.15	-
12	58.6	-	-	58.2	.50	-	49.6	50.1	50.1	50.1	32.61	-
13	58.8	58.7	58.2	58.2	.51	-	45.5	48.0	48.8	48.8	28.76	-
14	58.8	58.8	58.8	58.8	32.54	-	47.8	47.9	47.9	48.0	30.91	-
15	58.8	59.2	59.3	59.4	31.08	-	-	-	-	-	30.91	-
16	59.1	-	59.3	59.2	.21	-	48.0	47.8	47.7	47.7	31.16	-
17	59.0	59.2	59.2	59.2	.48	-	48.0	48.0	48.0	48.0	.70	-
18	59.1	59.2	59.2	59.2	.82	-	48.0	47.5	47.4	47.3	.61	-
19	59.2	59.5	59.6	59.6	.26	-	48.0	47.8	47.8	47.8	.45	-
20	59.1	59.2	59.5	59.5	.69	-	48.2	48.1	48.1	48.0	.66	-
21	58.8	59.2	59.2	59.2	.72	-	-	-	-	-	.19	-
22	58.1	58.5	59.0	59.0	.86	-	49.0	49.1	49.1	49.1	31.34	-
23	58.2	58.4	58.9	58.9	31.70	-	49.0	49.1	49.4	49.5	30.75	-
24	58.0	58.2	58.3	58.3	32.00	-	-	-	-	-	28.66	-
25	58.1	58.0	58.0	57.9	.00	-	49.7	49.3	49.5	49.6	31.72	-
26	57.7	57.2	57.2	57.2	32.06	-	-	-	-	-	-	-
27	57.5	57.4	57.3	57.2	-	-	49.2	49.8	49.8	49.8	31.62	-
28	57.5	57.8	57.8	57.7	-	-	47.8	50.0	50.2	50.2	29.16	-
29	55.7	57.7	57.7	57.7	26.56	-	48.5	48.8	50.1	50.1	30.89	-
30	-	-	-	-	-	-	48.6	48.6	48.6	48.6	32.22	-
31							48.7	48.7	48.5	48.4	32.06	-
Mean	58.4	58.6	58.7	58.7	31.77	-	49.9	50.2	50.3	50.3	31.23	-

Diamond Shoals Lightship (Figure 15, Table 15)

In discussing the 1956 observations Bumpus explained the unique hydrographic conditions which prevail at this station and the reader is referred to his remarks (Bumpus, 1957, b.)

Ten day means of surface temperature from January through March are slightly above the mean for 1923-1956 and indicate less frequent penetrations of cold coastal water across Diamond Shoals than occurred in 1956. From April through September temperatures are more uniform and stay above the mean and above the 1956 readings. Except for October, temperatures stayed high throughout the fall and early winter.

In terms of daily observations, the surface temperature range was from 44°-84°F; bottom temperature from 56°-81°F.

The progressive plot of 10 day means shows 1957 to be appreciably warmer at all depths than was 1956.

Surface salinity ranged from 36.3 °/oo to 32.5 °/oo; bottom salinity from 36.5 °/oo to 34.2.

From late June to late September surface and bottom salinities remained quite uniform and close together.

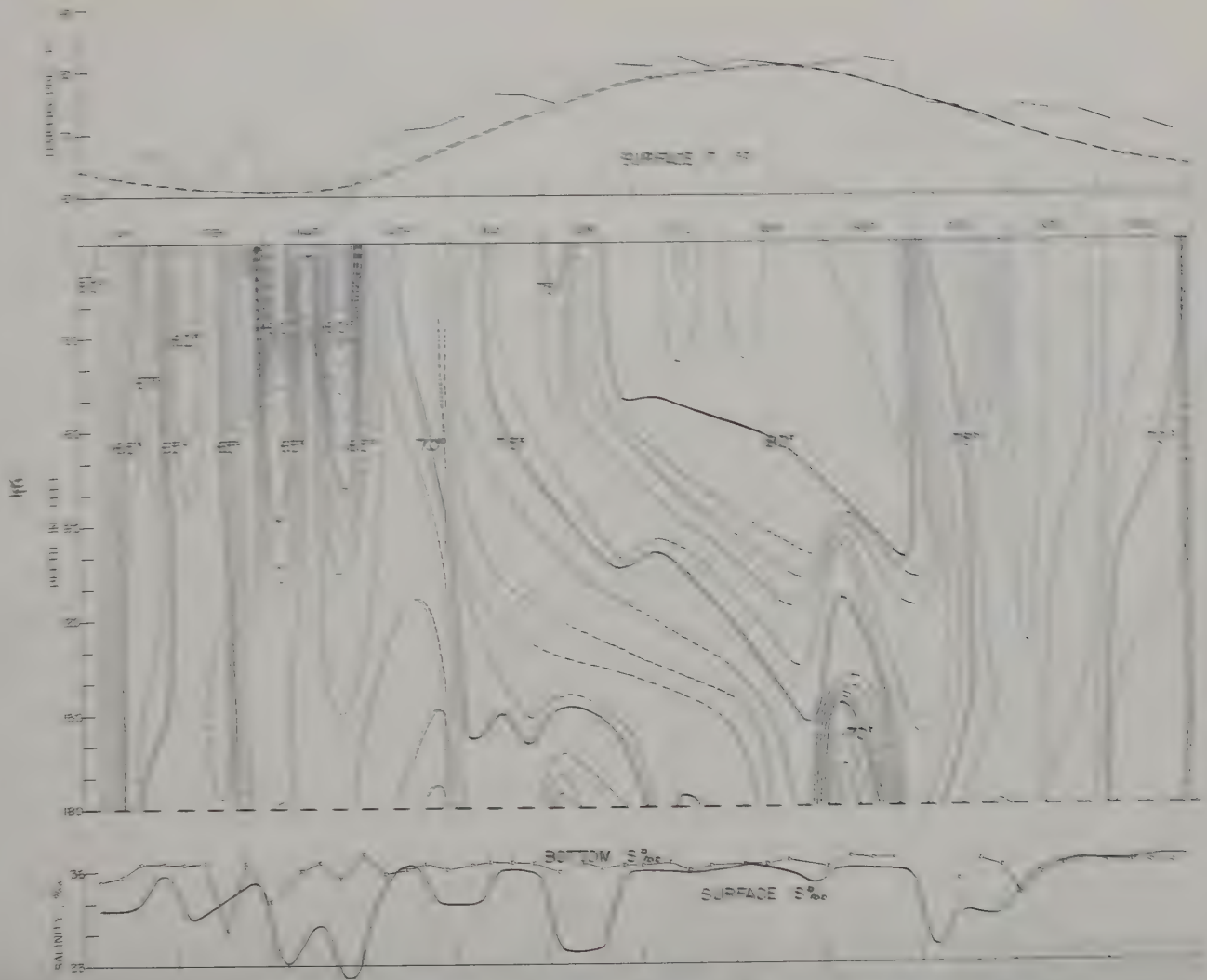

Figure 15. Diamond Shoals Lightship, 1957. (Dashed line in upper diagram, mean for period 1923-1956)

Table 15

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

January, 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	61.9	61.8	62.0	62.9	63.5	63.8	35.26	-
2	56.9	56.9	56.9	57.7	59.2	61.2	34.22	-
3	68.9	68.8	68.3	61.5	60.0	59.5	36.34	-
4	55.5	56.2	59.9	62.6	62.9	-	33.92	-
5	65.5	65.4	65.3	61.3	60.9	59.5	36.16	35.67
6	56.2	56.6	57.4	64.8	65.1	64.0	34.19	-
7	55.8	56.3	57.0	59.0	60.0	61.7	33.97	-
8	53.2	53.4	53.9	55.4	56.1	56.5	33.26	-
9	-	69.8	69.0	66.9	66.1	66.2	35.67	-
10	-	-	-	-	-	-	-	-
11	53.7	53.8	53.9	55.4	62.9	-	33.07	-
12	53.3	65.0	65.7	66.7	65.8	67.9	33.04	35.82
13	53.9	52.4	55.3	62.3	63.4	-	32.55	-
14	-	-	-	-	-	-	-	-
15	53.3	53.6	57.2	60.5	59.1	-	32.91	-
16	74.6	74.4	74.4	74.4	73.0	68.9	36.42	-
17	73.8	73.9	73.9	74.0	72.5	72.2	.05	-
18	73.3	73.3	73.3	73.2	71.7	70.4	.29	32.23
19	61.4	61.8	63.2	68.7	66.8	-	.37	-
20	68.0	68.0	68.1	65.3	64.4	63.9	.34	-
21	71.6	71.3	71.2	70.8	66.9	66.0	.28	-
22	75.0	75.0	75.0	75.0	66.0	64.9	36.07	-
23	58.2	58.3	58.9	63.3	66.1	-	33.96	-
24	67.3	67.3	67.3	66.9	65.8	64.0	36.32	-
25	64.6	64.4	63.9	61.7	61.0	60.6	36.23	-
26	63.5	-	-	-	-	-	34.71	36.27
27	68.9	68.6	68.6	68.2	67.2	64.0	36.27	-
28	66.5	66.2	66.2	62.3	61.4	60.8	.30	-
29	67.7	67.7	67.7	67.5	67.2	67.0	.32	-
30	72.5	-	-	-	-	-	.32	-
31	66.5	66.7	66.5	65.5	65.3	-	36.27	-
Mean	63.6	64.0	64.4	65.0	64.5	64.2	35.21	36.00

Table 15 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

February, 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	64.6	64.1	63.6	62.7	60.8	60.9	-	-
2	64.0	63.9	63.9	63.3	63.0	-	36.37	36.23
3	53.5	57.1	57.6	58.9	59.6	62.2	34.06	-
4	56.7	62.9	64.5	64.8	64.7	64.7	34.60	-
5	67.8	67.8	67.8	65.6	64.7	64.0	36.31	-
6	69.9	69.9	69.9	68.9	67.6	67.0	36.46	-
7	47.7	48.9	51.3	62.9	64.8	66.2	31.11	-
8	47.3	48.3	51.9	61.9	66.7	-	30.58	-
9	73.3	73.1	72.7	70.8	69.7	68.0	36.30	36.28
10	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-
13	72.7	72.4	71.0	69.9	66.0	64.8	36.28	-
14	70.7	70.4	69.4	69.3	68.4	68.2	36.38	-
15	52.1	52.2	52.3	53.1	54.4	64.0	33.34	-
16	43.9	44.7	50.7	48.3	51.3	56.7	30.82	34.16
17	72.2	72.1	72.1	71.4	68.8	67.3	36.28	-
18	69.9	69.9	69.9	69.8	65.9	62.6	.57	-
19	69.9	69.9	69.9	69.9	65.8	65.0	36.31	-
20	60.9	61.0	62.1	65.7	66.3	64.5	34.37	-
21	54.3	54.3	54.3	55.8	57.1	61.3	33.13	-
22	73.6	73.7	73.7	73.6	71.1	70.5	36.19	36.27
23	72.3	72.2	71.6	69.5	68.6	68.3	.28	-
24	74.5	-	-	-	-	-	-	-
25	71.1	71.1	71.0	69.9	67.8	63.8	.28	-
26	-	-	-	-	-	-	-	-
27	73.0	72.9	71.9	70.5	70.8	70.6	.18	-
28	72.6	72.5	72.3	71.5	70.1	67.9	36.17	-
Mean	64.5	64.6	65.0	65.6	65.0	65.2	35.02	35.74

Table 15 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

March, 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	54.0	54.9	52.4	56.6	63.2	68.1	31.52	35.04
2	-	-	-	-	-	-	31.92	-
3	51.9	55.9	59.2	65.6	68.2	61.9	31.74	-
4	65.9	65.9	65.9	68.0	68.7	64.8	35.17	-
5	59.4	59.7	62.3	68.7	69.7	69.5	33.67	-
6	53.8	54.2	56.4	62.0	66.0	67.0	32.66	-
7	-	-	-	-	-	-	-	-
8	73.9	73.9	73.9	72.4	65.3	68.0	36.10	-
9	-	-	-	-	-	-	-	-
10	54.4	53.3	63.9	64.2	69.4	-	31.46	36.00
11	62.5	70.0	70.2	70.2	69.1	69.1	34.06	-
12	53.1	69.1	69.0	68.4	67.2	67.9	31.05	-
13	56.8	59.6	61.9	63.6	67.9	67.9	31.90	-
14	56.7	66.6	66.8	66.8	67.8	67.8	32.21	-
15	-	-	-	-	-	-	-	-
16	72.1	72.1	72.1	72.1	70.9	70.1	36.21	36.28
17	71.9	71.9	71.9	71.9	69.3	69.1	36.18	-
18	73.1	72.1	72.1	69.8	69.8	69.9	36.18	-
19	71.1	71.1	71.0	69.0	68.1	67.6	36.16	-
20	64.5	64.6	64.9	66.8	66.5	66.5	34.62	-
21	59.2	59.6	59.8	61.2	63.3	65.8	-	-
22	73.0	73.0	73.0	69.2	68.5	-	36.18	-
23	51.0	51.5	52.8	58.6	67.5	69.7	32.33	35.75
24	52.8	62.0	65.0	67.3	69.2	70.1	31.49	-
25	55.9	56.9	63.9	68.9	68.4	66.0	32.21	-
26	-	-	-	-	-	-	32.35	-
27	53.0	58.3	60.0	66.0	68.2	67.2	30.87	-
28	51.1	48.7	50.2	63.4	66.1	68.4	31.04	-
29	50.0	50.1	56.2	68.4	69.7	69.2	29.78	-
30	58.6	63.9	71.7	71.1	69.9	70.0	32.64	36.52
31	70.1	70.1	70.0	69.6	68.7	67.9	36.28	-
Mean	60.4	62.7	64.9	66.9	67.9	67.9	33.26	35.92

Table 15 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

April, 1957

Depth / Day	Temperature °F 0'	30'	50'	100'	150'	180'	Salinity °/oo 0'	180'
1	69.9	69.9	69.9	69.8	69.1	69.0	36.18	-
2	64.1	64.4	67.7	68.3	68.3	-	34.88	-
3	69.0	69.0	69.0	67.7	67.4	65.5	36.03	-
4	70.4	70.2	69.9	68.2	67.9	67.8	36.18	-
5	70.6	70.4	70.3	70.0	68.7	68.1	36.26	-
6	-	-	-	-	-	-	36.00	-
7	62.8	62.8	63.2	66.4	66.1	66.1	34.10	35.91
8	-	64.1	64.0	66.0	66.9	66.9	32.23	-
9	62.6	62.6	64.2	66.8	67.3	-	34.26	-
10	67.3	67.7	68.0	69.0	68.9	68.3	35.67	-
11	70.1	69.7	69.4	69.0	68.9	68.2	36.31	-
12	68.9	68.9	68.9	68.8	68.4	65.2	36.28	-
13	65.9	65.9	66.0	66.2	-	-	35.87	-
14	72.8	71.1	68.9	66.3	66.1	-	36.21	36.01
15	71.6	71.4	71.4	71.0	66.9	66.5	36.26	-
16	70.4	70.6	70.2	68.8	67.3	66.9	36.28	-
17	71.3	70.0	68.9	66.6	66.1	65.9	36.12	-
18	71.9	71.7	71.1	68.7	67.2	67.2	36.21	-
19	71.7	70.5	70.2	69.1	67.1	66.0	36.18	-
20	71.6	70.6	70.5	69.4	67.3	67.1	36.21	36.21
21	70.7	70.2	70.1	69.8	68.2	66.9	33.26	-
22	68.8	70.3	69.8	68.1	66.7	-	33.86	-
23	72.8	72.8	71.4	68.3	67.4	66.9	35.34	-
24	71.0	73.1	71.6	69.0	-	-	35.26	-
25	72.2	71.1	68.6	64.6	61.3	60.2	35.78	-
26	69.1	67.6	68.6	66.7	65.6	65.2	34.48	-
27	73.2	70.9	70.2	68.5	66.5	65.0	35.83	36.03
28	68.7	70.8	69.9	68.0	66.9	64.8	34.28	-
29	71.1	70.3	71.1	69.2	65.3	65.0	35.56	-
30	72.0	71.0	71.1	69.7	67.2	66.9	35.69	-
Mean	69.7	69.3	69.1	68.2	67.1	66.3	35.44	36.04

Table 15 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

May, 1957

Depth / Day	Temperature °F 0'	30'	50'	100'	150'	180'	Salinity °/oo 0'	180'
1	74.9	75.1	70.8	68.8	67.4	67.5	36.01	-
2	76.2	75.9	75.0	72.3	69.7	67.5	.18	-
3	73.2	73.2	73.2	72.1	70.2	68.8	.10	-
4	75.8	75.7	75.6	75.4	70.3	67.9	.23	-
5	76.1	76.1	76.1	75.3	73.2	70.8	.09	36.18
6	72.9	72.9	72.5	70.9	69.8	69.4	36.31	-
7	68.4	73.9	74.1	74.1	70.8	70.3	32.17	-
8	68.3	74.1	74.2	73.4	70.1	69.3	32.20	-
9	68.0	76.1	76.9	72.1	-	-	31.57	-
10	75.0	74.1	73.9	73.3	72.1	70.3	36.09	-
11	75.9	74.8	74.2	68.7	65.7	65.0	36.08	36.27
12	-	-	-	-	-	-	-	-
13	76.1	74.6	71.3	71.9	70.2	68.1	35.88	-
14	77.1	76.4	76.1	73.9	70.0	67.3	36.03	-
15	77.1	76.7	75.9	74.5	70.0	67.2	36.00	-
16	77.1	77.0	76.1	74.2	68.4	65.9	35.96	-
17	76.3	76.1	75.8	74.8	74.0	72.9	36.04	-
18	76.0	76.0	75.4	72.4	70.4	68.3	36.12	36.25
19	76.1	75.8	75.8	75.2	70.7	68.6	35.87	-
20	75.8	75.7	75.4	73.1	70.4	68.8	36.05	-
21	76.1	76.1	76.1	74.8	72.0	71.1	35.98	-
22	76.1	76.0	75.8	74.0	74.1	73.8	36.03	-
23	75.9	75.9	75.9	74.1	72.1	70.9	35.96	-
24	73.9	73.9	75.0	72.3	69.0	66.1	.62	-
25	75.8	75.6	75.2	73.7	70.3	67.9	35.98	36.22
26	76.2	75.9	75.1	73.1	69.6	67.8	36.07	-
27	75.2	75.6	75.8	71.9	66.9	64.7	35.69	-
28	75.7	75.7	75.5	74.8	72.7	67.4	35.94	-
29	75.9	76.0	75.7	72.8	71.9	69.2	36.07	-
30	80.2	80.2	79.0	75.1	74.9	72.0	36.08	-
31	78.8	78.8	78.8	75.0	72.4	71.8	35.99	-
Mean	75.2	75.7	75.2	73.3	70.7	68.8	35.61	36.23

Table 15 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

June, 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	78.4	78.4	78.2	74.9	70.8	69.8	35.94	-
2	76.8	77.1	76.8	72.8	70.8	70.5	.58	-
3	80.7	76.3	76.0	75.5	69.0	66.0	35.72	35.96
4	73.8	77.5	77.4	76.0	71.9	68.4	33.69	-
5	70.2	74.2	74.0	74.0	66.7	63.7	32.23	-
6	71.8	74.7	75.0	72.0	65.0	61.8	33.25	-
7	71.6	70.3	72.4	73.8	71.4	66.2	30.34	-
8	73.1	77.1	77.1	73.4	69.0	67.1	30.92	-
9	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-
11	78.4	79.2	79.1	76.4	72.3	70.9	35.74	36.24
12	78.2	77.7	77.3	77.1	72.8	71.8	35.34	-
13	73.8	77.4	76.8	75.5	75.2	75.2	30.27	-
14	78.3	78.2	77.3	76.5	70.3	67.7	31.79	-
15	78.8	78.9	77.7	73.7	67.6	66.5	33.29	-
16	78.7	78.2	77.6	71.7	66.0	65.2	32.97	-
17	79.8	78.0	77.2	70.1	65.9	64.2	32.51	36.07
18	79.8	79.4	79.0	76.3	68.3	68.3	31.93	-
19	80.1	79.7	78.3	72.6	67.8	-	35.16	-
20	79.6	79.6	79.9	74.6	67.9	65.2	35.42	-
21	79.2	78.8	78.7	75.0	71.2	66.2	35.71	-
22	82.7	81.1	80.7	76.4	70.2	68.8	36.12	-
23	80.9	80.1	78.8	72.4	68.3	66.9	35.76	-
24	81.1	81.0	80.7	75.7	70.5	67.2	36.03	36.16
25	80.1	79.8	79.9	78.3	70.2	69.4	35.53	-
26	82.2	81.5	80.8	79.3	75.9	-	36.08	-
27	80.7	80.5	80.4	75.8	70.1	67.8	35.89	-
28	82.1	81.0	80.9	80.1	72.1	70.6	36.12	-
29	80.1	79.8	79.4	78.7	72.0	66.7	35.62	-
30	-	-	-	-	-	-	-	-
Mean	78.2	78.4	78.1	75.1	70.0	67.7	34.26	36.11

Table 15 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

July, 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	79.9	77.9	77.3	77.2	75.0	74.5	35.96	36.14
2	81.0	80.9	80.8	75.4	70.7	69.6	36.18	-
3	80.2	80.1	78.8	69.0	66.1	65.9	.12	-
4	80.2	79.8	79.8	75.1	70.3	68.8	36.04	-
5	80.2	79.8	79.0	78.2	77.3	77.0	35.74	-
6	80.8	80.8	80.5	73.5	67.1	65.0	36.01	-
7	80.1	79.9	79.8	77.2	71.0	66.0	35.92	-
8	83.2	83.1	82.9	78.5	77.2	76.7	36.10	36.23
9	81.6	81.3	80.8	71.5	67.6	65.8	35.86	-
10	79.8	79.7	79.2	73.1	-	-	.89	-
11	81.9	81.5	80.1	77.2	72.8	69.6	.70	-
12	82.0	81.2	81.3	79.6	75.0	74.9	.58	-
13	81.5	81.2	81.1	78.8	72.1	71.1	.65	-
14	82.2	81.9	80.6	68.8	62.9	62.7	.90	-
15	82.7	82.1	82.2	74.6	70.0	63.2	35.89	35.99
16	83.9	83.2	81.8	79.1	73.9	72.9	36.19	-
17	83.0	82.7	82.6	77.8	71.3	68.9	-	-
18	82.9	80.2	74.3	70.9	70.0	69.9	36.23	-
19	81.0	81.2	76.3	71.1	70.5	68.9	35.90	-
20	81.8	81.6	81.2	78.3	74.6	71.1	.89	-
21	82.1	81.8	82.2	78.7	70.1	70.0	.65	-
22	82.0	81.8	81.4	71.9	67.8	66.1	.68	36.15
23	81.2	81.1	80.5	73.6	64.1	62.8	35.89	-
24	-	-	-	-	-	-	-	-
25	80.2	80.2	80.2	79.9	77.8	77.0	35.92	-
26	77.1	77.1	77.1	75.1	71.9	69.7	.86	-
27	80.5	78.4	77.8	75.2	72.1	71.1	35.96	-
28	80.1	79.8	79.1	73.6	70.9	70.2	36.00	-
29	79.8	79.7	79.6	78.7	71.3	70.7	.08	-
30	81.2	81.2	81.3	77.8	76.2	76.1	.04	-
31	83.2	82.9	82.9	81.8	77.9	77.0	36.09	-
Mean	81.2	80.8	80.1	75.7	71.6	70.5	35.93	36.13

Table 15 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

August, 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	82.3	79.7	75.5	71.6	68.3	68.1	36.11	-
2	82.0	81.3	77.7	70.2	67.1	66.2	.10	-
3	82.5	81.1	79.6	74.8	70.1	66.9	36.11	36.18
4	81.0	80.3	78.8	71.3	67.7	64.2	35.98	-
5	77.9	82.2	82.1	80.9	73.9	72.3	36.12	-
6	81.7	81.2	80.9	80.4	77.1	76.2	.16	-
7	82.9	82.9	82.7	80.9	75.2	75.1	.15	-
8	82.8	82.7	82.7	82.6	76.9	75.2	.10	-
9	82.3	82.2	82.1	81.5	75.8	75.6	.34	-
10	81.2	80.9	80.2	79.2	76.9	75.0	36.16	36.18
11	81.9	81.2	81.2	80.1	77.3	72.9	35.86	-
12	81.1	80.7	80.1	78.9	76.8	76.9	36.08	-
13	-	-	-	-	-	-	35.99	-
14	82.9	82.7	82.3	78.2	72.1	70.7	.81	-
15	82.3	82.5	82.5	76.8	70.8	69.2	.83	-
16	80.3	80.2	79.8	79.0	69.7	-	35.94	-
17	80.1	79.9	79.2	78.8	76.1	75.5	36.13	36.29
18	82.1	82.1	81.9	78.8	75.8	75.2	35.89	-
19	80.8	80.8	80.8	80.2	75.8	74.5	35.95	-
20	76.9	76.9	76.8	76.7	76.4	76.2	36.00	-
21	82.8	82.8	82.8	80.2	77.9	77.9	35.86	-
22	81.9	81.9	81.9	78.9	77.9	77.9	35.82	-
23	-	-	-	-	-	-	-	-
24	81.8	81.8	81.8	81.8	81.8	79.8	35.88	-
25	82.0	82.0	82.0	82.1	82.2	81.8	.92	-
26	79.9	79.8	79.1	72.7	69.9	69.7	.89	-
27	79.3	79.9	79.6	79.3	67.8	66.2	35.45	-
28	81.1	80.7	80.3	78.4	69.9	69.1	36.04	-
29	76.3	77.2	77.2	77.1	75.5	73.3	34.16	-
30	80.1	80.2	80.4	80.3	77.1	73.0	34.37	-
31	-	-	-	-	-	-	35.84	36.09
Mean	81.1	81.0	80.4	78.3	74.3	73.1	35.87	36.18

Table 15 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

September, 1957

Depth / Day	Temperature °F 0'	30'	50'	100'	150'	180'	Salinity °/oo 0'	180'
1	81.9	80.9	80.2	79.8	73.0	71.0	36.21	-
2	81.8	80.5	80.2	79.2	75.4	70.2	.20	-
3	81.7	80.8	80.1	78.8	73.0	71.3	.19	-
4	81.1	80.9	80.8	74.9	70.9	-	.09	-
5	80.7	80.7	80.3	70.5	66.7	65.7	36.13	-
6	80.6	80.2	79.2	70.7	67.1	66.9	35.80	-
7	81.0	80.5	80.2	73.8	67.1	-	35.78	36.40
8	80.9	80.6	80.2	74.2	66.1	65.2	36.51	-
9	80.3	80.2	79.9	76.1	66.8	64.1	35.92	-
10	81.4	80.1	79.8	76.8	69.8	65.5	36.09	-
11	81.2	80.2	80.1	78.3	71.6	67.5	35.94	-
12	81.9	80.5	79.9	79.7	73.2	65.9	35.98	-
13	83.0	82.1	81.8	79.5	72.8	67.9	36.47	-
14	83.0	82.0	81.8	77.4	71.3	67.8	36.00	36.34
15	82.5	82.2	82.1	79.3	72.0	69.0	35.98	-
16	83.2	83.1	83.0	78.9	72.3	69.8	.90	-
17	82.1	81.9	79.9	74.1	68.7	67.0	.69	-
18	80.2	80.0	79.1	74.1	70.2	68.8	.98	-
19	80.8	80.3	80.2	79.4	77.8	75.5	35.94	-
20	82.2	80.8	79.9	78.9	76.1	74.1	36.04	-
21	80.5	80.0	79.9	80.0	74.0	72.1	35.20	36.36
22	80.6	80.2	80.1	79.8	78.3	78.0	36.01	-
23	83.0	83.8	83.6	82.5	77.7	77.1	36.00	-
24	-	-	-	-	-	-	-	-
25	81.8	81.5	81.5	81.0	78.2	76.9	35.96	-
26	81.7	81.4	81.4	81.2	76.8	75.7	36.44	-
27	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-
Mean	81.6	81.0	80.6	77.6	72.3	70.1	36.02	36.37

Table 15 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

October, 1957

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	81.0	81.0	81.0	80.7	78.2	78.0	36.21	-
2	80.9	80.8	80.8	79.4	78.9	78.5	.21	-
3	80.5	80.5	80.6	80.6	79.0	-	36.00	-
4	79.9	79.8	79.8	79.8	79.3	77.5	35.98	-
5	-	-	-	-	-	-	-	-
6	70.2	70.2	71.5	79.5	79.2	78.0	32.47	-
7	69.2	78.2	78.9	77.0	74.8	74.0	31.09	-
8	69.3	69.3	70.0	78.0	75.4	54.1	30.80	-
9	70.0	70.2	72.5	77.8	75.2	72.8	31.25	-
10	71.2	76.8	77.6	77.8	75.6	71.2	31.97	-
11	70.2	69.8	70.1	73.8	77.1	77.5	32.10	-
12	70.1	70.0	70.0	73.5	77.1	76.2	32.96	35.67
13	69.8	70.0	71.0	73.9	75.5	75.1	33.13	-
14	80.0	80.0	79.9	79.3	77.4	77.7	36.17	-
15	77.2	77.2	76.8	76.8	75.7	75.1	.46	-
16	77.2	74.9	74.7	73.6	73.2	70.4	36.12	-
17	68.6	74.4	76.3	71.9	69.1	69.0	32.20	-
18	77.9	77.8	77.8	77.3	76.7	71.3	36.09	-
19	77.0	77.0	77.1	77.2	75.1	72.9	36.02	36.27
20	73.8	73.9	73.9	74.8	75.2	73.9	35.44	-
21	70.0	70.4	70.6	72.8	75.3	74.0	34.10	-
22	73.2	73.1	73.2	74.0	75.3	74.8	34.84	-
23	77.1	77.1	76.4	75.4	74.8	74.2	35.98	-
24	78.1	78.1	78.1	76.2	73.9	71.9	36.19	-
25	71.5	71.9	73.0	74.3	73.5	72.2	34.75	-
26	75.0	75.0	75.0	75.2	76.5	-	35.76	36.08
27	65.7	65.9	65.9	67.4	70.1	70.3	33.34	-
28	64.5	64.5	64.9	69.6	71.5	72.3	32.87	-
29	62.4	63.8	64.3	68.9	71.3	71.5	32.38	-
30	66.8	66.8	68.0	74.5	75.6	-	33.72	-
31	78.3	78.3	78.3	77.5	75.1	74.8	36.14	-
Mean	73.2	73.9	74.3	75.6	75.4	74.0	34.29	36.01

Table 15 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

November, 1957

Depth / Day	Temperature °F 0'	30'	50'	100'	150'	180'	Salinity °/oo 0'	180'
1	77.2	77.2	77.1	76.2	74.7	72.8	35.99	-
2	64.9	64.9	64.9	68.4	70.3	70.5	33.03	35.17
3	75.9	76.2	76.3	76.3	74.5	74.5	35.78	-
4	76.7	76.5	76.7	76.5	75.8	75.2	36.18	-
5	76.7	76.8	76.8	76.8	75.9	74.8	.12	-
6	75.4	75.4	75.4	75.3	75.2	74.1	36.55	-
7	73.7	75.2	75.0	73.6	73.2	73.1	35.62	-
8	73.7	73.8	73.7	73.1	73.1	72.9	36.15	-
9	75.4	75.2	74.9	72.0	69.8	69.7	.18	35.80
10	75.8	75.7	75.5	75.6	75.7	75.1	.12	-
11	74.9	74.9	74.9	74.6	73.6	73.4	.14	-
12	74.9	74.9	74.8	74.5	73.9	72.2	.39	-
13	73.5	73.5	73.5	72.9	71.9	71.7	36.37	-
14	-	-	-	-	-	-	-	-
15	73.2	72.6	72.5	71.7	71.8	71.8	-	-
16	72.8	72.7	72.6	71.2	70.5	70.5	36.19	36.09
17	69.2	69.1	68.9	68.9	68.4	68.1	35.82	-
18	76.5	76.6	76.3	75.0	73.1	68.6	36.16	-
19	-	-	-	-	-	-	-	-
20	75.0	74.9	75.0	74.7	73.6	71.7	36.36	-
21	73.6	73.5	73.5	72.5	71.7	70.3	.16	-
22	73.9	73.9	73.8	73.7	72.8	71.5	36.26	-
23	-	-	-	-	-	-	-	-
24	73.9	73.9	73.8	73.7	73.7	73.0	36.27	36.22
25	-	-	-	-	-	-	-	-
26	71.8	71.8	71.2	69.2	69.1	69.1	36.28	-
27	72.2	71.9	71.9	72.0	70.9	70.9	36.20	-
28	75.5	75.4	75.3	74.8	73.9	73.8	-	-
29	73.1	73.1	73.1	73.1	71.4	71.1	36.47	-
30	73.1	73.1	73.1	72.9	71.7	71.1	36.18	36.18
Mean	73.9	73.9	73.9	73.4	72.7	72.0	36.04	35.89

Table 15 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

December, 1957

Day	Temperature °F						Salinity °/oo	
Depth	0'	30'	50'	100'	150'	180'	0'	180'
1	71.9	71.9	71.9	71.6	70.5	69.4	36.14	-
2	70.1	70.1	70.2	70.3	70.3	70.4	.10	-
3	74.9	72.6	71.4	68.9	68.5	68.3	36.23	-
4	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-
6	72.0	72.0	72.0	64.7	62.6	62.2	36.25	-
7	-	-	-	-	-	-	-	-
8	70.5	70.5	70.5	70.1	70.1	70.1	36.25	36.26
9	71.5	71.5	71.4	70.8	70.0	69.2	.17	-
10	70.2	70.2	70.0	69.3	68.5	67.8	.16	-
11	67.7	67.6	67.6	67.7	66.8	66.2	36.12	-
12	-	-	-	-	-	-	-	
13	72.0	66.5	64.7	62.6	61.4	-	36.30	-
14	72.5	72.4	71.8	71.1	70.0	69.5	.32	36.25
15	72.2	72.0	71.5	70.7	70.4	70.2	.34	-
16	70.8	70.7	70.7	70.0	70.0	69.2	.36	-
17	71.5	71.5	71.6	70.7	69.1	65.6	.35	-
18	73.0	72.9	72.3	71.7	70.2	66.6	.37	-
19	72.1	72.1	72.1	71.7	69.8	68.6	.36	-
20	73.2	73.2	73.2	72.8	71.9	69.6	.34	-
21	68.8	68.3	68.2	67.7	67.7	67.8	.28	36.23
22	71.2	71.2	71.5	71.3	69.9	69.1	.27	-
23	70.8	70.7	70.4	70.2	68.8	67.0	.35	-
24	69.1	69.1	69.0	69.0	67.8	-	.35	-
25	70.0	69.8	69.8	69.1	68.8	67.7	.35	-
26	-	-	-	-	-	-	.27	-
27	65.9	65.8	65.8	65.8	65.7	-	.26	-
28	71.9	71.8	71.2	68.2	66.3	66.1	36.36	-
29	-	-	-	-	-	-	-	-
30	71.3	71.4	71.5	71.4	69.3	67.8	36.28	-
31	71.5	71.5	71.5	71.5	70.5	69.8	36.36	-
Mean	71.1	70.7	70.5	69.6	68.6	68.1	36.28	-

Frying Pan Shoals Lightship (Figure 16, Table 16)

Surface temperatures from late January through early June were above both the mean and the 1956 record. The winter minimum occurred at the bottom in January and was warmer by 5 degrees than the 1956 minimum. A surface maximum of greater than 80°F appeared briefly in mid-August.

As in 1956, the thermocline was the result of an intrusion of relatively cold water at the bottom which produced a temperature gradient, surface to bottom, of 6 degrees. The minimum temperature in the intrusion was 2 degrees warmer than the minimum in the 1956 intrusion. At the time of the surface maximum, the temperature gradient was only 2 degrees.

There was no indication of coastal water arriving at this station from the north as had been the case in November of 1956.

Temperature data from October through the end of the year are open to question and should be considered at best as approximations, as the bathythermograph was not functioning properly.

Surface salinities were greater than 36.0 °/oo from January through mid-April and again from October through the end of the year; during these times surface and bottom readings were nearly identical. Summer values were generally less than 36.0 °/oo and were slightly lower than those for the previous year. This is in contrast with the reduced runoff which was apparent north of Cape Hatteras.

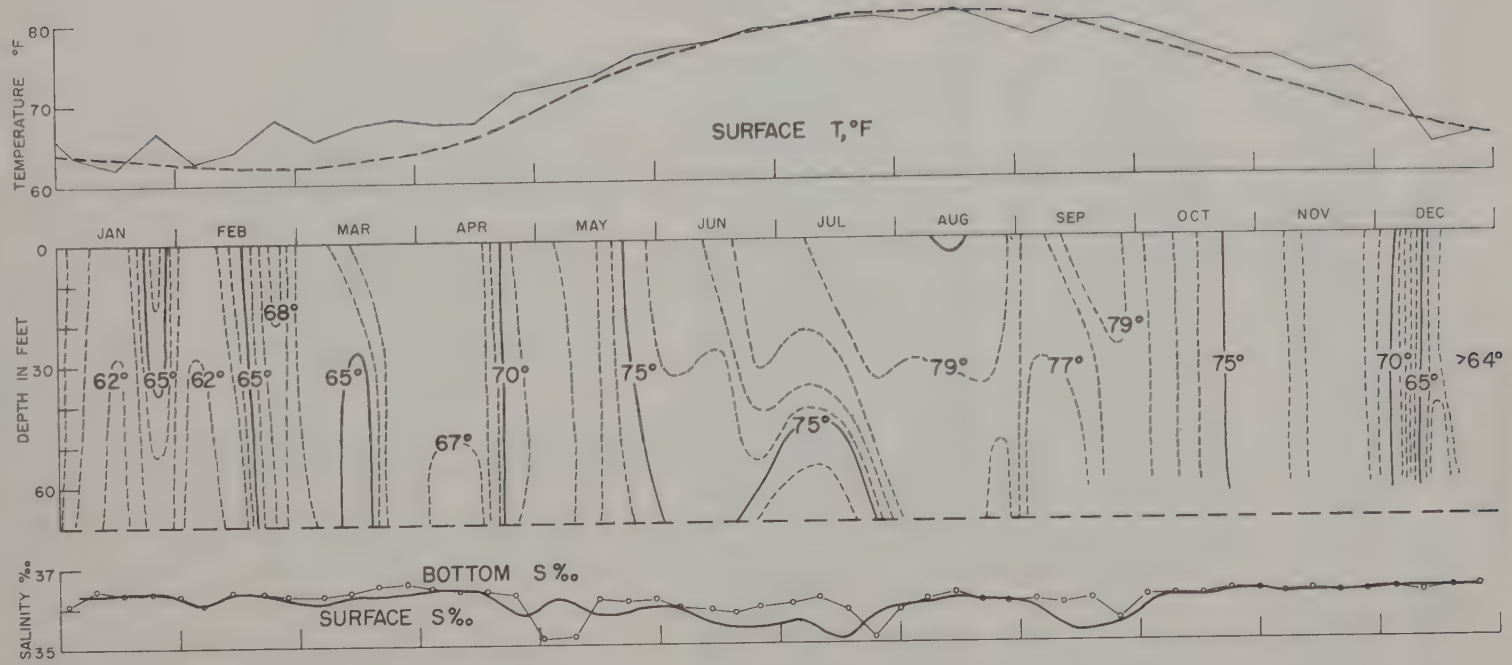

Figure 16. Frying Pan Shoals Lightship, 1957. (Dashed line in upper diagram, mean for period 1947-1956)

Table 16

FRYING PAN SHOALS LIGHTSHIP 33°28'00"N. 77°33'08"W. Depth of water - 72 feet

1957

Day	January Temperature °F 0'	30'	50'	70'	January Salinity °/oo 0'	70'	February Temperature °F 0'	30'	50'	70'	February Salinity °/oo 0'	70'
1	62.5	62.5	62.5	62.6	36.19	-	65.5	65.5	65.5	65.6	36.43	-
2	60.9	60.8	60.8	61.0	.13	36.09	64.0	64.0	64.0	64.0	36.18	-
3	61.8	61.9	62.0	62.0	.35	-	68.7	67.8	67.5	67.1	36.29	-
4	65.7	65.3	64.1	63.1	.29	-	-	-	-	-	-	-
5	65.1	65.2	65.2	65.2	.29	-	62.0	62.2	62.2	62.1	36.16	-
6	62.6	62.7	62.4	62.0	.38	-	63.0	63.0	63.0	62.8	36.18	36.05
7	65.5	65.6	65.1	63.0	.33	-	58.8	57.4	57.5	57.0	36.47	-
8	62.7	63.0	63.0	63.0	.42	-	55.0	54.8	54.8	54.9	36.46	-
9	65.5	65.6	64.6	63.0	.35	36.47	64.2	59.2	59.0	59.0	36.25	-
10	64	-	-	-	.37	-	63.6	63.3	63.0	63.0	36.08	-
11	63.8	64.0	64.0	64.0	.27	-	65.0	63.8	62.9	-	36.06	-
12	67.9	67.9	67.9	67.9	.28	-	60.2	60.2	60.2	60.0	36.18	-
13	61.7	61.6	61.7	61.7	.27	-	62.4	62.1	61.3	61.3	36.36	36.39
14	61.7	61.7	61.6	61.5	.27	-	68.6	68.4	63.4	63.2	36.36	-
15	61.3	61.0	60.6	60.4	.37	-	66.0	66.0	66.0	-	36.44	-
16	58.7	58.8	59.1	59.0	.37	36.34	65.0	64.6	63.1	63.0	36.38	-
17	60.2	60.1	59.8	60.0	.37	-	-	-	-	-	36.42	-
18	59.5	59.4	59.4	59.6	.36	-	65.0	62.3	62.2	62.1	36.40	-
19	59.8	59.8	59.8	59.8	.37	-	63.2	63.0	62.8	62.8	36.41	-
20	66.6	63.2	59.8	59.8	.41	-	62.5	62.5	62.5	62.4	36.48	-
21	64.2	63.1	61.1	61.0	.44	-	59.7	59.7	59.7	59.9	36.33	36.33
22	69.3	66.6	61.9	61.9	.46	-	63.4	63.5	63.5	63.1	36.44	-
23	68	-	-	-	.41	36.37	73.0	72.2	66.0	-	36.21	-
24	62.2	62.0	62.2	62.2	.39	-	71.0	70.3	70.2	70.1	36.21	-
25	71.1	69.8	68.6	68.5	.36	-	68.8	68.7	68.6	68.2	36.21	-
26	65.8	65.6	64.7	63.0	.41	-	70.0	70.0	70.0	69.9	36.33	-
27	66.4	65.6	64.2	64.0	.40	-	70.4	70.0	69.9	69.6	36.28	36.27
28	67.5	67.0	66.2	65.5	.37	-	68.8	68.7	69.0	68.9	36.06	-
29	65.7	65.4	65.6	65.6	.36	-						
30	64	-	-	-	.21	36.30						
31	66.5	65.7	63.7	63.6	36.44	-						
Mean	64.1	63.6	62.9	62.6	36.35	36.31	64.9	64.4	63.8	63.5	36.22	36.26

Table 16 (cont'd)

FRYING PAN SHOALS LIGHTSHIP 33°28'00"N. 77°33'08"W. Depth of water - 72 feet

1957

	March						April					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	(70)	-	-	-	36.22	-	66.7	66.5	66.3	66.2	36.22	-
2	(68)	-	-	-	36.36	-	67.5	67.5	67.5	67.5	36.43	-
3	(67)	-	-	-	-	-	67.8	67.8	67.8	-	36.32	36.43
4	(69)	-	-	-	36.23	-	67.2	-	67.0	-	36.36	-
5	(66)	-	-	-	36.50	-	68.0	67.7	67.2	67.1	36.30	-
6	64.4	65.3	65.5	-	36.70	36.27	68.0	68.0	68.1	68.1	36.34	-
7	66.3	66.0	66.0	66.0	36.25	-	67.0	66.7	66.7	-	36.37	-
8	(66.5)	-	-	-	-	-	67.5	67.2	67.2	67.2	36.40	-
9	(62)	-	-	-	36.30	-	66.3	66.4	66.3	66.2	36.41	-
10	(55)	-	-	-	34.06	-	65.8	65.8	65.8	65.8	36.39	36.35
11	55.4	56.0	55.9	56.0	34.94	-	64.7	64.7	64.5	64.5	36.36	-
12	62.1	62.0	62.2	62.2	36.37	-	67.0	67.0	67.0	-	36.35	-
13	64.2	64.3	64.5	64.5	(37.18)	36.36	67.5	67.3	67.3	67.4	36.36	-
14	67.9	67.7	67.4	-	36.30	-	-	-	-	-	36.41	-
15	68.2	68.1	67.9	67.9	36.20	-	65.7	65.8	65.9	65.9	36.52	-
16	(68.5)	-	-	-	36.42	-	67.7	67.3	66.4	66.0	36.41	-
17	(70)	-	-	-	36.44	-	67.0	66.8	66.9	66.9	36.39	36.37
18	(71.5)	-	-	-	36.38	-	67.7	67.7	67.6	67.6	36.32	-
19	(72)	-	-	-	36.39	-	69.0	68.5	68.5	68.3	36.41	-
20	70.8	70.6	70.3	70.2	36.41	36.50	69.7	68.8	68.7	-	36.31	-
21	(68)	-	-	-	36.40	-	70.0	70.0	70.0	-	36.41	-
22	(70)	-	-	-	36.48	-	69.9	69.6	69.5	-	36.32	-
23	(66)	-	-	-	36.25	-	69.0	68.9	68.8	68.8	36.19	-
24	68.0	67.9	67.8	67.9	36.43	-	69.3	69.6	69.5	69.5	35.37	36.28
25	65.2	65.3	65.5	65.5	36.25	-	71.0	71.0	70.5	70.3	35.25	-
26	(69)	-	-	-	36.18	-	71.0	70.8	70.7	70.6	36.08	-
27	(68)	-	-	-	-	36.52	72.5	71.5	71.3	71.2	36.42	-
28	(67.5)	-	-	-	36.28	-	72.7	72.5	72.5	72.5	36.19	-
29	68.3	68.3	68.3	68.5	36.19	-	73.0	73.3	73.3	73.3	35.38	-
30	70.2	70.2	70.6	-	36.19	-	72.9	72.0	72.0	72.0	33.76	-
31	66.8	66.7	66.7	-	36.24	-						
Mean	66.8	66.0	66.0	65.4	36.20	36.41	68.6	68.5	68.3	68.3	36.16	36.36

Table 16 (cont'd)

FRYING PAN SHOALS LIGHTSHIP 33°28'00"N. 77°33'08"W. Depth of water - 72 feet

1957

	May						June					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	72.5	72.6	72.4	72.6	36.12	35.18	76.5	76.2	75.3	75.2	35.99	-
2	73.3	73.0	72.3	72.2	35.92	-	-	-	-	-	36.00	-
3	71.9	71.9	71.7	71.1	36.19	-	76.8	76.6	75.8	75.9	36.06	-
4	71.8	71.9	71.7	71.8	36.00	-	77.0	76.9	76.4	-	36.00	-
5	69.0	68.9	69.0	69.0	36.46	-	76.6	76.6	76.5	76.5	35.97	35.95
6	71.9	70.2	69.9	70.0	.15	-	76.2	76.2	76.2	76.1	35.96	-
7	71.8	71.8	-	-	.16	-	76.5	76.1	75.4	-	35.99	-
8	73.1	-	71.1	71.1	.19	36.21	77.0	76.0	74.8	74.8	35.92	-
9	72.3	72.2	72.1	72.0	.16	-	76.0	75.6	75.0	-	35.45	-
10	72.7	72.2	72.1	72.1	.18	-	75.8	75.8	75.8	-	35.90	-
11	73.8	73.6	73.4	73.2	36.14	-	75.6	75.2	75.0	-	35.87	-
12	68.7	68.6	68.3	-	35.36	-	76.0	75.7	75.7	-	35.82	-
13	70.7	70.4	70.3	70.2	35.98	-	76.8	76.8	76.7	-	35.84	-
14	72.0	72.1	72.1	72.1	34.75	-	75.5	74.9	74.9	-	35.52	35.84
15	-	-	-	-	34.64	36.14	76.0	75.6	-	-	35.38	-
16	73.9	73.7	73.6	73.5	36.12	-	77.0	74.9	74.9	-	35.06	-
17	73.6	73.6	73.4	73.5	.16	-	78.6	76.0	76.0	76.0	35.34	-
18	74.8	74.1	73.8	-	.05	-	78.3	76,3	76.1	76.0	.06	-
19	74.9	74.7	74.5	74.5	.01	-	78.8	76.9	76.3	76.1	.56	35.77
20	74.7	74.3	74.2	74.2	.14	-	78.7	75.9	75.0	74.9	35.29	-
21	74.5	73.9	73.8	73.2	.16	-	79.1	78.6	76.3	73.0	34.82	-
22	75.1	74.8	74.7	-	.10	36.09	78.4	77.1	75.3	73.3	35.04	-
23	75.1	74.8	73.8	73.8	.09	-	78.3	78.1	72.7	72.1	.51	-
24	75.1	75.0	74.9	74.9	36.03	-	78.9	78.6	78.5	73.0	.97	-
25	75.8	74.5	74.1	74.0	35.96	-	78.9	78.9	77.7	74.2	.98	-
26	76.0	74.7	73.3	-	.71	-	78.7	78.5	77.6	75.9	.67	35.91
27	75.9	75.4	73.4	-	.56	-	-	-	-	-	.49	-
28	75.8	75.6	-	-	35.67	-	79.8	79.3	78.4	75.8	.29	-
29	76.7	76.1	73.4	73.2	36.04	36.12	78.9	77.8	77.0	76.1	.44	-
30	75.9	75.7	74.5	-	35.94	-	77.1	76.9	74.2	72.3	35.27	-
31	76.3	76.2	74.9	74.8	-	-						
Mean	73.7	73.3	72.7	72.6	35.94	35.95	77.4	76.7	75.9	74.8	35.62	35.87

Table 16 (cont'd)

[illegible] 33°28'00"N. 77°32'08"W. Depth of water - 72 feet

1957

Depth / Day	July Temperature °F 0'	30'	50'	70'	July Salinity °/oo 0'	70'	August Temperature °F 0'	30'	50'	70'	August Salinity °/oo 0'	70'
1	-	-	-	-	35.42	-	78.9	78.3	76.1	76.0	35.83	-
2	78.1	77.8	75.5	74.3	.56	-	78.9	78.1	77.7	77.1	.72	-
3	78.1	78.1	74.8	74.8	.76	36.00	80.6	80.1	79.9	79.9	35.81	-
4	78.1	76.6	74.7	74.7	.74	-	81.1	80.3	79.0	78.2	36.10	-
5	78.3	78.1	75.2	74.3	.80	-	-	78.3	77.2	76.9	35.39	-
6	78.2	78.0	-	-	.55	-	78.3	78.2	78.2	78.1	36.00	-
7	79.2	76.3	74.2	71.9	.45	-	79.3	79.2	79.2	79.2	.11	36.09
8	80.1	79.8	77.7	72.5	.87	-	79.1	79.1	79.0	79.0	.10	-
9	79.3	79.3	75.0	73.9	.44	-	79.3	79.2	79.1	79.0	.08	-
10	80.0	74.9	72.4	72.4	35.29	36.14	78.8	78.8	78.8	-	.10	-
11	76.2	73.7	71.5	71.1	34.39	-	79.9	79.8	79.8	79.7	.12	-
12	77.9	75.0	72.9	72.9	35.12	-	80.5	79.6	79.2	79.2	.13	-
13	80.4	76.8	73.9	73.8	34.93	-	80.9	80.2	78.8	77.9	.12	-
14	80.9	75.2	73.6	73.6	35.13	-	81.8	81.7	80.4	78.3	.14	36.23
15	80.8	80.6	74.3	74.2	.09	-	81.2	77.5	77.0	76.9	36.14	-
16	80.1	79.9	77.4	73.7	.26	-	79.3	78.8	76.8	76.4	35.94	-
17	79.7	79.0	74.3	74.2	.29	35.82	80.2	77.8	76.7	-	36.14	-
18	79.2	79.1	74.5	74.3	.47	-	82.5	79.5	77.4	77.4	-	-
19	80.1	79.8	74.3	74.3	.42	-	-	-	-	-	35.82	-
20	80.3	80.2	78.5	75.1	.23	-	-	-	-	-	-	-
21	80.8	80.2	77.2	74.1	.16	-	79.9	79.9	79.9	79.9	-	36.01
22	80.2	79.8	79.6	72.8	.45	-	79.8	79.8	79.8	79.8	36.00	-
23	80.2	80.1	76.5	72.0	.15	-	79.8	79.8	79.8	79.8	-	-
24	-	79.7	74.5	70.4	35.10	35.16	79.1	79.1	79.1	-	-	-
25	81.1	81.0	80.2	72.3	36.19	-	78.4	78.3	78.2	-	-	-
26	80.1	80.1	80.1	79.7	.22	-	79.0	78.9	78.9	78.9	36.02	-
27	79.5	-	-	-	.25	-	78.7	78.5	78.6	-	-	-
28	79.8	79.9	79.3	79.2	.18	-	78.8	78.6	78.5	78.5	35.95	-
29	79.7	79.3	79.4	79.3	.16	-	78.5	78.5	78.5	78.5	36.05	-
30	79.8	79.8	79.8	79.6	36.23	-	79.0	78.9	78.9	78.9	36.03	-
31	78.3	77.9	77.3	77.1	35.71	35.82	78.8	78.8	78.8	78.8	35.98	-
Mean	79.5	78.5	76.0	74.4	35.52	35.79	79.7	79.1	78.6	78.4	35.99	36.11

Table 16 (cont'd)

FRYING PAN SHOALS LIGHTSHIP 33°28'00"N. 77°33'08"W. Depth of water - 72 feet

1957

	September						October*					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	60'	0'	60'	0'	30'	50'	60'	0'	60'
1	77.2	77.2	77.2	77.2	36.12	-	80	80	79	79	36.09	-
2	77.0	77.0	77.0	76.2	-	-	79	79	79	79	.08	36.14
3	77.8	76.6	76.5	76.3	35.98	-	80	80	80	-	.00	-
4	78.1	78.0	78.0	-	.98	36.03	78	78	78	-	.09	-
5	77.8	77.6	77.3	-	.92	-	78	78	78	78	.16	-
6	77.0	76.6	76.6	76.5	.76	-	78	78	78	78	.06	-
7	77.7	76.9	76.7	76.4	.85	-	78	78	78	-	.05	-
8	77.2	76.8	76.8	76.8	.90	-	76.0	76.0	76.0	-	.10	-
9	75.9	75.1	74.7	74.2	.66	-	77	77	77	77	36.18	36.16
10	79.0	77.9	76.3	76.3	.11	-	75	75	75	75	35.98	-
11	79.1	77.1	76.9	76.9	.11	35.98	75.0	75	75	75	35.85	-
12	79.3	77.6	76.8	76.8	.06	-	74	74	74	74	36.10	-
13	78.9	76.4	76.2	76.3	.60	-	77	77	77	77	.09	-
14	79.5	78.1	76.6	76.5	.03	-	78	78	78	77	.11	-
15	79.8	76.9	76.9	76.9	.14	-	77.0	77	77	77	.10	-
16	79.4	76.9	77.0	77.0	.11	-	76	76	76	76	.18	36.12
17	79.2	78.3	76.8	76.8	.09	-	76	76	76	-	.13	-
18	78.7	76.5	75.9	75.9	.52	36.08	76.0	76	76	-	.01	-
19	78.9	78.1	76.8	76.8	.62	-	76	76	76	76	.06	-
20	-	-	-	-	.45	-	77	76	76	76	.31	-
21	78.8	77.1	77.1	77.0	.31	-	77	77	77	77	.34	-
22	78.9	77.9	77.8	77.8	.55	-	77.0	77	77	77	.25	-
23	79.7	78.8	78.7	78.7	.08	-	76	76	76	-	.28	36.26
24	79.8	79.8	79.8	79.8	.51	-	76	76	76	76	.25	-
25	78.9	78.9	79.0	78.9	.55	35.56	76	75	75	76	.28	-
26	80.1	80.1	80.1	80.0	35.83	-	75	75	75	75	.23	-
27	80.1	80.1	80.0	80.0	-	-	74	74	74	74	.16	-
28	79.8	79.8	79.8	79.8	-	-	73	73	73	73	.48	-
29	78.8	78.8	78.8	-	-	-	73	73	73	73	.22	-
30	77.8	77.8	77.6	77.5	-	-	72	72	73	73	.22	36.25
31							71	71	71	71	36.22	-
Mean	78.6	77.7	77.4	77.3	35.51	35.91	76	76	76	76	36.15	36.19

* Extreme corrections necessitated by BT malfunction.
Temperature values approximate.

Table 16 (cont'd)

FRYING PAN SHOALS LIGHTSHIP 33°28'00"N. 77°33'08"W. Depth of water - 72 feet

1957

Depth / Day	November* Temperature °F 0'	30'	50'	60'	Salinity °/oo 0'	60'	December* Temperature °F 0'	30'	50'	60'	Salinity °/oo 0'	60'
1	-	-	-	-	-	-	70	70	70	70	36.20	-
2	73	73	73	73	36.16	-	67	68	68	68	.18	-
3	74	74	74	74	.16	-	67	67	67	67	.18	-
4	75	75	75	75	.16	-	69	69	69	69	.17	36.23
5	75	75	75	75	.14	-	66	66	66	66	.24	-
6	74	74	74	74	.14	36.16	72	66	65	65	.26	-
7	75	75	75	75	.16	-	73	73	73	73	.28	-
8	76	76	76	76	.11	-	74	74	74	74	.27	-
9	75	75	75	75	.14	-	72	72	72	72	.12	-
10	74	74	74	74	.12	-	70	70	70	70	.19	-
11	71	71	72	72	.21	-	67	67	67	67	.17	36.17
12	-	71	71	71	.09	-	61	61	61	61	.18	-
13	72	72	72	72	.21	36.21	60	60	60	60	.06	-
14	73	73	73	73	.15	-	62	62	62	62	.27	-
15	72	72	72	72	.15	-	63	63	63	63	.30	-
16	72	72	72	72	.17	-	64	64	64	64	.32	-
17	72	73	72	72	.15	-	64	64	64	64	.26	-
18	72	72	72	72	.28	-	62	62	62	62	.26	36.26
19	73	73	73	73	.09	-	67	62	60	60	.34	-
20	74	74	74	74	.20	36.18	65	64	64	64	.28	-
21	73	73	73	73	.20	-	64	64	64	64	.25	-
22	74	74	74	74	.28	-	65	65	65	65	.30	-
23	73	73	73	73	.21	-	66	66	66	66	.29	-
24	73	73	73	73	.23	-	66	66	66	66	.29	-
25	73	73	73	73	.17	-	65	65	65	65	.30	36.30
26	72	72	72	72	.23	-	65	65	65	65	.21	-
27	72	72	72	72	.19	36.18	64	64	64	64	.21	-
28	73	73	73	73	.21	-	63	63	63	63	.23	-
29	72	72	72	72	.21	-	64	63	63	63	.26	-
30	73	73	73	73	36.09	-	63	63	63	63	.19	-
31							65	64	62	62	36.37	-
Mean	73	73	73	73	36.17	36.18	66	66	65	65	36.24	36.24

* Extreme corrections necessitated by BT malfunction.
Temperature values approximate.

Savannah Lightship (Figure 17, Table 17)

Surface temperatures from January through July were in general slightly above the mean and above those for 1956. The summer maximum occurred in mid-August and was followed by a sharp decline of about 4 degrees. Temperatures during the six weeks from mid-September through October stayed above the mean, after which readings fell below. As in 1956, the water column stayed very nearly isothermal throughout the year.

Minimum temperatures probably occurred at the end of December (observations for the last 10 days are missing) and were probably several degrees warmer than the 1956 minimum. The maximum of greater than 84°F. coincides with that of 1956 both in time and temperature.

Surface salinity shows a minimum (10 day means) of 31.6 °/oo at the end of April and a maximum of 35.2 °/oo in mid-January. The 1956 surface minimum and maximum respectively were 33.2 °/oo and 35.9 °/oo. It is apparent that there was appreciably more rainfall and runoff in 1957 than in the previous year.

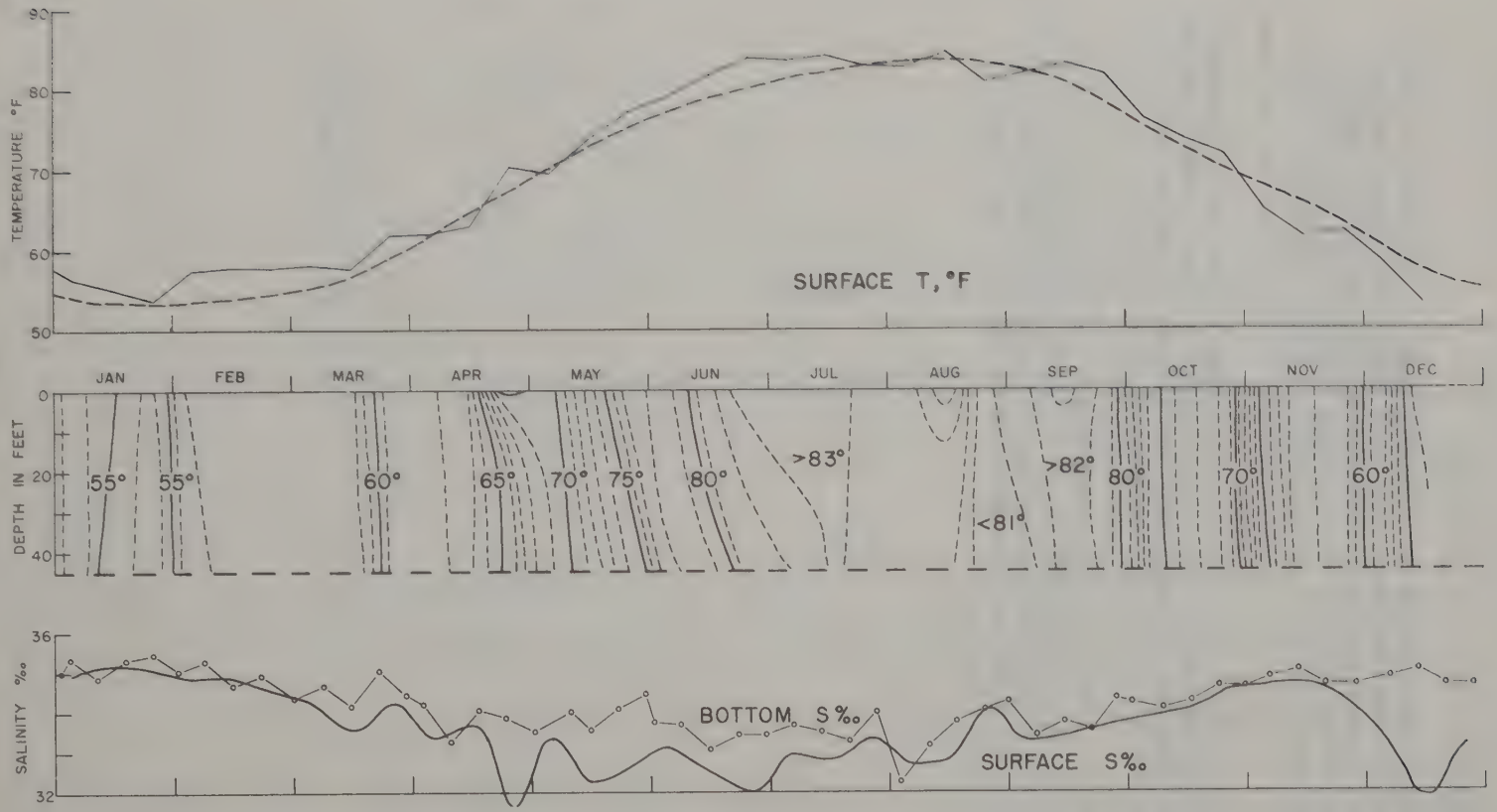

Figure 17. Savannah Lightship, 1957. (Dashed line in upper diagram, mean for period 1947-1955)

Table 17

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1957

	January					February				
	Temperature °F			Salinity °/oo		Temperature °F			Salinity °/oo	
Depth / Day	0'	30'	48'	0'	48'	0'	30'	48'	0'	48'
1	57.9	57.8	57.8	35.06	-	56.8	55.9	55.9	34.35	35.02
2	56.7	57.2	57.2	34.97	35.02	56.1	56.1	56.1	.73	-
3	56.3	56.2	56.1	35.16	-	56.1	55.9	55.7	.91	-
4	56.4	56.1	56.0	35.28	35.33	57.3	56.1	56.1	34.68	-
5	55.8	55.8	55.8	33.70	-	58.7	56.8	56.7	33.63	-
6	56.2	56.1	56.1	34.97	-	56.9	56.2	56.1	34.95	-
7	56.4	56.3	56.3	35.22	-	56	-	-	35.34	-
8	56.1	56.0	56.0	35.12	-	58.2	57.0	57.0	.29	35.30
9	56.3	56.3	56.2	35.17	-	59.0	58.0	57.8	35.71	-
10	56.3	56.2	56.1	34.60	-	58.9	57.4	57.5	34.44	-
11	56.3	-	-	34.97	34.85	58.9	58.0	58.1	34.59	-
12	56.0	55.9	55.7	35.35	-	57.4	57.4	57.3	35.02	-
13	56	-	-	35.07	-	57.5	57.3	57.3	34.79	-
14	55.8	55.7	55.8	34.60	-	-	-	-	.59	-
15	55.8	55.7	55.6	35.03	-	57.4	57.3	57.2	.67	34.68
16	55.4	55.4	55.4	35.28	-	57.4	57.4	57.4	.91	-
17	55.3	55.2	55.3	35.32	-	57.2	57.7	57.7	34.76	-
18	54.0	54.0	53.9	35.34	35.30	57.9	57.7	57.6	35.18	-
19	53.1	53.2	53.1	35.38	-	58.0	57.7	57.7	.20	-
20	53.1	53.0	52.9	35.46	-	57.9	57.9	57.9	.09	-
21	53.4	53.1	53.0	35.58	-	57.2	57.2	57.2	35.54	-
22	53.5	53.2	53.2	35.70	-	57.3	57.3	57.0	34.91	34.91
23	53.8	53.6	53.4	35.56	-	-	-	-	.75	-
24	53.9	53.8	53.8	35.64	-	57.3	57.1	57.1	.68	-
25	53	-	-	35.17	35.44	-	-	-	.44	-
26	52.1	52.1	52.0	35.20	-	58.1	57.1	57.1	34.08	-
27	52.8	52.4	52.3	35.01	-	57.3	57.3	57.3	33.90	-
28	53.1	52.6	52.5	34.93	-	58.7	57.7	57.5	34.01	-
29	54.7	54.0	53.9	33.65	-					
30	54.8	54.3	54.3	34.31	-					
31	55.1	55.1	54.8	35.08	-					
Mean	55.0	54.9	54.8	35.06	35.19	57.6	57.1	57.1	34.76	34.98

Table 17 (cont'd)

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1957

	March					April				
	Temperature °F			Salinity °/oo		Temperature °F			Salinity °/oo	
Depth / Day	0'	30'	48'	0'	48'	0'	30'	48'	0'	48'
1	59.0	59.0	59.0	32.57	34.34	59.0	59.0	59.0	34.58	-
2	59.8	59.7	59.1	34.08	-	59.7	59.6	59.5	34.33	-
3	58.0	58.0	58.7	34.17	-	61.7	60.2	60.0	32.94	34.19
4	-	-	-	34.27	-	61.0	60.5	60.4	33.89	-
5	-	-	-	34.59	-	61.8	61.6	61.1	34.08	-
6	57.7	57.7	57.5	34.66	-	61.8	61.8	61.9	33.54	-
7	-	57.5	57.5	34.53	-	63.0	62.2	62.8	32.93	-
8	-	-	-	34.67	34.67	63.8	62.1	62.0	32.45	-
9	56.5	56.4	56.4	34.35	-	62.9	62.8	62.9	33.08	-
10	56.7	56.0	55.8	34.22	-	63.0	63.0	63.0	32.10	33.26
11	56.0	56.0	55.8	33.74	-	62.9	62.8	62.8	33.26	-
12	56.3	56.2	-	32.87	-	62.5	62.5	62.5	33.41	-
13	56.3	56.3	-	32.33	-	63.5	63.2	63.2	32.53	-
14	57.0	-	-	32.89	-	62.6	62.8	62.8	-	-
15	60.7	57.0	-	32.84	34.12	62.4	62.4	62.4	34.13	-
16	58.5	58.0	-	34.17	-	61.7	61.7	61.7	34.13	-
17	-	-	-	34.21	-	62.8	62.8	62.8	34.11	34.04
18	-	-	-	34.14	-	62.9	62.8	62.8	33.90	-
19	-	-	-	34.37	-	63.5	63.3	63.3	33.93	-
20	-	-	-	33.78	-	64.0	63.8	63.8	33.78	-
21	-	-	-	34.48	-	64.2	64.0	63.9	33.54	-
22	-	-	-	35.07	35.01	63.9	63.4	63.3	33.70	-
23	-	-	-	34.97	-	69.0	65.0	65.0	30.09	-
24	-	-	-	34.58	-	70.0	64.9	64.8	30.98	33.84
25	-	-	-	34.32	-	70.0	65.0	65.2	31.86	-
26	-	-	-	32.98	-	72.0	65.1	65.0	30.81	-
27	-	61.5	61.7	33.86	-	72.6	65.7	65.3	31.08	-
28	-	-	-	33.96	-	72.9	65.9	65.9	31.32	-
29	61.5	61.5	61.5	34.34	34.41	74.8	67.0	67.0	31.32	-
30	61.8	61.4	61.4	34.22	-	73.0	67.3	67.2	31.59	-
31	61.9	61.9	61.8	34.12	-					
Mean	(58.5)	(58.4)	(58.8)	34.01	34.51	65.0	63.1	63.1	32.88	33.83

Table 17 (cont'd)

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1957

	May					June				
	Temperature °F			Salinity °/oo		Temperature °F			Salinity °/oo	
Depth / Day	0'	30'	48'	0'	48'	0'	30'	48'	0'	48'
1	70.2	69.6	68.0	33.52	33.50	78.2	77.4	77.2	33.52	33.73
2	69.2	69.1	68.9	33.44	-	78.0	77.7	76.1	.10	-
3	72.0	69.3	69.3	32.88	-	78.3	77.8	77.7	.40	-
4	69.1	69.1	69.1	34.14	-	79.0	78.3	78.2	.20	-
5	68.4	68.4	68.4	33.68	-	79.3	78.3	78.3	33.32	-
6	68.6	68.3	68.0	33.00	-	79.5	78.4	78.4	32.58	-
7	68.7	68.2	68.1	32.42	-	80.6	78.5	78.5	.85	-
8	69.3	68.8	68.7	32.95	-	78.9	78.6	77.7	32.74	33.00
9	69.0	69.0	68.8	33.79	-	79.0	78.5	77.6	33.05	-
10	69.7	69.2	69.1	33.55	33.99	78.1	-	-	.23	-
11	70.0	69.7	69.7	33.79	-	78.6	77.6	77.3	.43	-
12	71.9	70.0	69.9	31.50	-	79.7	78.7	78.5	33.24	-
13	72.0	70.1	70.1	.57	-	79.7	79.0	-	32.65	-
14	74.2	70.3	70.3	31.77	-	81.5	-	-	31.67	-
15	74.3	70.8	70.8	32.02	33.53	80	-	-	32.42	33.05
16	74.7	71.4	70.9	31.92	-	82.2	79.3	79.3	.02	-
17	74.7	71.2	71.1	31.90	-	83	-	-	.26	-
18	73.6	72.4	72.0	33.17	-	83	-	-	.31	-
19	75.3	73.3	72.7	33.02	-	84	-	-	32.94	-
20	75.7	74.8	72.6	31.93	-	84.0	80.9	80.3	31.42	-
21	77.6	73.3	73.1	.82	-	84.4	81.2	80.5	.82	-
22	78.1	73.3	72.7	31.56	34.06	83.9	80.8	80.6	31.99	33.41
23	78.2	75.5	74.0	32.14	-	86.4	84.2	83.9	32.13	-
24	78.4	73.6	73.7	31.80	-	84.5	81.0	80.8	32.06	-
25	78.0	73.6	73.7	32.19	-	84.2	81.3	81.2	31.82	-
26	77.5	73.5	73.4	.28	-	82.4	81.9	81.6	31.77	-
27	76.1	73.5	73.5	32.67	-	83	-	-	30.89	-
28	75.7	73.1	73.1	33.96	-	83.3	82.5	81.8	31.82	-
29	76.1	74.8	74.7	.72	34.41	81.7	81.7	81.6	33.45	33.41
30	76.3	75.7	75.6	.47	-	83.1	82.4	82.1	32.89	-
31	76.1	76.0	76.0	33.72	-					
Mean	73.5	71.6	71.3	32.75	33.90	81.4	79.8	79.4	32.53	33.45

Table 17 (cont'd)

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1957

Depth / Day	July Temperature °F 0'	July Temperature °F 30'	July Temperature °F 48'	July Salinity °/oo 0'	July Salinity °/oo 48'	August Temperature °F 0'	August Temperature °F 30'	August Temperature °F 48'	August Salinity °/oo 0'	August Salinity °/oo 48'
1	83.7	81.7	81.5	33.34	-	82.3	81.6	81.3	-	-
2	81.8	81.6	81.2	.33	-	83.4	82.0	-	32.09	-
3	81.7	81.7	81.7	.09	-	83.5	82.7	-	-	32.24
4	84.3	81.8	81.7	.25	-	83.1	82.4	-	31.11	-
5	83.2	82.2	81.9	33.01	-	-	-	-	-	-
6	83.7	82.4	82.3	32.93	33.65	82.8	82.8	82.8	-	-
7	83.8	82.4	82.3	.53	-	81.7	-	-	33.30	-
8	84.2	82.2	82.2	32.89	-	-	-	-	.56	-
9	83.9	82.5	82.5	31.89	-	-	-	-	33.61	-
10	85.1	83.3	83.1	32.74	-	82.1	81.4	81.1	32.38	33.14
11	84.1	83.2	83.2	32.84	-	83.7	82.4	81.8	32.62	-
12	85.2	84.7	84.2	33.32	-	-	-	-	-	-
13	83.9	83.3	83.3	.33	33.50	84.2	82.7	-	32.22	-
14	83.5	82.1	82.0	33.72	-	84.4	82.5	82.0	.14	-
15	85.2	83.3	-	31.54	-	84.2	83.3	-	32.69	-
16	84.8	83.2	83.1	32.33	-	85.7	82.8	82.1	33.30	-
17	84.7	83.3	83.1	.67	-	85.4	83.6	-	.24	33.76
18	84.5	82.9	82.9	.69	-	85.3	82.4	82.2	33.41	-
19	82.1	82.5	-	32.64	-	85.2	82.3	-	32.42	-
20	82.3	82.3	82.2	33.32	33.28	82.8	82.7	82.4	33.52	-
21	82.6	82.1	81.8	33.49	-	82.3	82.2	82.0	33.59	-
22	83.6	82.3	82.1	32.53	-	81.6	81.2	81.1	34.08	-
23	83.5	83.2	83.0	.11	-	81.1	80.9	80.8	.10	-
24	84.6	83.9	-	32.89	-	80.3	80.3	80.2	.04	34.04
25	83.3	83.3	83.1	33.12	-	80.2	80.0	-	.10	-
26	82.1	81.8	81.6	33.84	-	80.2	79.9	79.8	34.17	-
27	82.1	81.7	-	34.17	33.99	-	80.1	-	33.78	-
28	81.2	81.2	81.2	33.90	-	80.1	79.7	79.2	34.07	-
29	81.8	81.6	-	.63	-	80.4	80.1	79.8	.29	-
30	81.8	81.4	-	.82	-	80.3	80.1	79.9	.31	-
31	82.1	81.8	-	33.57	-	81.9	80.7	80.5	34.31	34.25
Mean	83.4	82.5	82.4	33.05	33.60	82.6	81.6	81.1	33.32	33.49

Table 17 (cont'd)

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1957

	September					October				
	Temperature °F			Salinity °/oo		Temperature °F			Salinity °/oo	
Depth / Day	0'	30'	48'	0'	48'	0'	30'	48'	0'	48'
1	81.6	80.5	80.3	33.47	-	-	-	-	-	
2	81.7	81.1	80.9	32.73	-	77.1	77.2	77.5	33.65	34.21
3	81.8	81.0	-	33.29	-	77.4	77.4	77.5	.88	-
4	82.0	80.9	80.6	.10	-	76.9	76.9	76.9	.59	-
5	82.4	81.2	81.0	.10	-	75.8	75.9	75.7	33.59	-
6	82.3	81.3	81.1	.52	-	75.9	75.9	75.9	34.01	-
7	81.4	81.3	-	.13	33.40	75.3	75.5	75.7	33.42	-
8	81.0	81.2	81.2	.31	-	75.8	75.4	75.5	33.96	-
9	81.9	81.1	81.1	.65	-	75.4	75.2	75.3	34.09	34.08
10	81.9	81.3	81.2	.29	-	75.4	75.3	75.4	34.14	-
11	83.2	81.8	81.6	.79	-	-	-	-	33.58	-
12	83.1	82.3	-	.85	-	-	-	-	34.07	-
13	83.1	82.5	82.1	.46	-	76.9	76.8	76.8	.46	-
14	83.3	82.4	82.2	.77	33.74	75.6	75.1	75.2	.36	-
15	82.9	82.5	82.3	.72	-	73.9	73.8	73.7	.09	-
16	83.0	82.9	82.8	.84	-	73.8	73.7	73.6	.24	34.23
17	82.9	82.5	-	33.50	-	73.7	73.7	73.9	34.35	-
18	83.0	82.5	-	32.80	-	72.6	73.7	73.7	32.55	-
19	83.0	82.9	82.9	32.37	-	70.6	70.6	70.6	33.99	-
20	83.8	83.1	83.0	33.15	-	72.4	72.7	-	34.50	-
21	-	81.7	81.7	.43	33.56	72.1	72.2	72.3	.60	-
22	84.0	83.1	83.0	.12	-	72.6	72.6	72.6	.70	-
23	85.2	83.2	83.1	.07	-	73.1	72.8	72.8	.53	34.66
24	83.0	82.9	82.8	.36	-	73.4	73.2	73.2	.64	-
25	82.5	82.3	82.1	.67	-	73.3	73.3	73.4	.61	-
26	82.2	81.9	81.8	.77	-	73.1	73.1	73.1	.59	-
27	81.1	81.0	-	33.83	-	72.1	72.2	72.2	.60	-
28	79.7	80.1	-	34.37	34.34	70.7	70.8	70.9	.44	-
29	79.8	79.7	-	33.97	-	70.3	70.3	70.3	.55	-
30	79.2	79.1	79.0	34.21	-	70.1	70.2	70.2	34.45	34.60
31						68.7	69.5	70.1	33.96	-
Mean	82.3	81.7	81.7	33.45	33.76	73.7	73.8	73.9	34.14	-

Table 17 (cont'd)

SAVANNAH LIGHTSHIP 31°56.5'N. 80°3⅞.6'W. Depth of water - 48 feet

1957

	November					December				
	Temperature °F			Salinity °/oo		Temperature °F			Salinity °/oo	
Depth / Day	0'	30'	48'	0'	48'	0'	30'	48'	0'	48'
1	65.1	65.2	65.3	34.58	-	59.9	60.2	60.3	33.72	-
2	65.5	65.5	65.6	34.78	-	57.8	57.8	57.8	33.61	-
3	64.1	65.9	66.0	33.04	-	56.9	59.5	59.9	32.15	-
4	65.3	66.0	66.1	34.32	-	59.2	59.2	59.2	32.51	-
5	65.8	65.8	65.8	.96	-	-	-	-	33.30	-
6	65.7	65.7	65.8	.88	34.87	58.1	58.0	58.0	.26	-
7	-	-	-	.89	-	56.6	56.4	56.3	.40	-
8	65.4	65.2	65.2	.75	-	57.2	57.2	57.4	.64	-
9	64.8	64.8	64.8	.80	-	59.2	59.2	59.2	.76	-
10	61.9	61.9	62.0	34.97	-	57.6	57.8	57.9	.25	-
11	-	-	-	35.06	-	-	-	-	33.11	-
12	61.3	61.3	61.3	34.95	-	56.9	56.9	56.9	32.64	-
13	60.3	59.7	59.7	35.06	35.02	50.1	53.2	55.1	32.38	-
14	61.8	61.8	61.9	34.99	-	51.8	54.1	54.1	30.91	-
15	61.1	61.7	61.7	.62	-	50.8	55.1	55.2	30.12	-
16	59.7	59.7	59.8	34.60	-	52.0	53.7	53.9	29.34	-
17	61.9	62.0	62.0	33.95	-	52.0	54.1	54.2	31.25	-
18	62.3	62.3	62.3	34.50	-	53.9	53.9	54.0	32.42	-
19	-	-	-	.59	-	54.3	54.7	54.8	33.02	-
20	63.3	63.3	63.3	.62	34.67	55.0	55.1	55.2	33.27	-
21	63.0	63.0	63.0	.60	-	-	-	-	32.16	32.60
22	-	-	-	.62	-	-	-	-	32.39	-
23	62.8	62.7	62.7	.79	-	-	-	-	33.02	-
24	62.5	62.6	62.6	.71	-	-	-	-	.18	-
25	-	-	-	.82	-	-	-	-	.23	-
26	61.7	61.9	62.0	.60	-	-	-	-	.59	-
27	62.4	62.2	62.2	34.79	34.73	-	-	-	.11	-
28	62.0	62.1	62.2	-	34.62	-	-	-	.40	33.43
29	-	-	-	32.22	-	-	-	-	.50	-
30	62.0	62.2	62.4	32.96	-	-	-	-	.76	-
31						-	-	-	33.32	-
Mean	63.0	63.1	63.2	34.52	34.78	-	-	-	32.77	-

LITERATURE CITED

BUMPUS, D. F.

1957a. Surface water temperature along the Atlantic and Gulf coasts of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Special Scientific Report--Fisheries No. 214, 153 pp.

1957b. Oceanographic observations, 1956, east coast of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Special Scientific Report--Fisheries No. 233, 132 pp.

HACHEY, H. B.

1939. Surface water temperatures of the Canadian Atlantic Coast. Journal Fisheries Research Board of Canada, vol. 4, No. 15, pp. 378-391.

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